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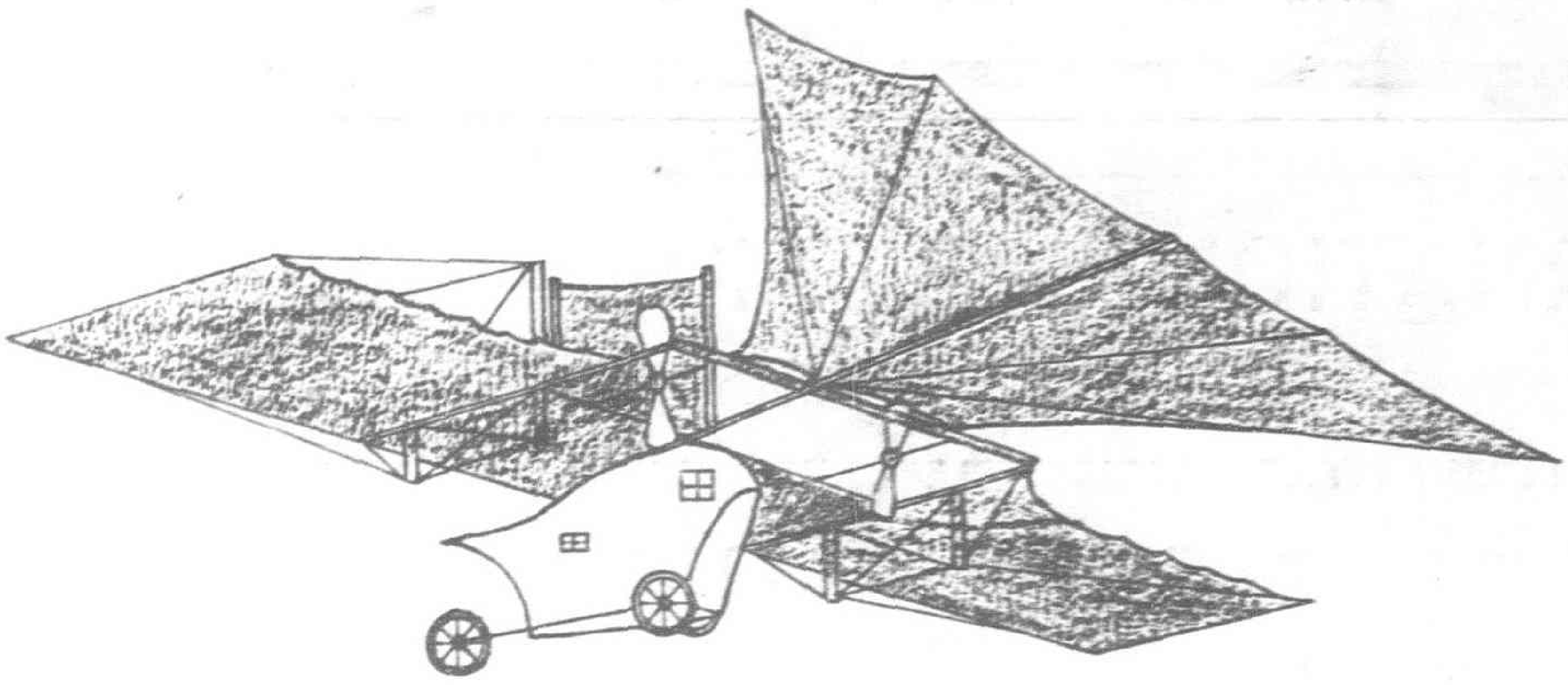
THE FAR EASTERN REVIEW

VOL. VI. MANILA, SHANGHAI AND YOKOHAMA, FEBRUARY, 1910. No. 9.

DYNAMIC FLIGHT



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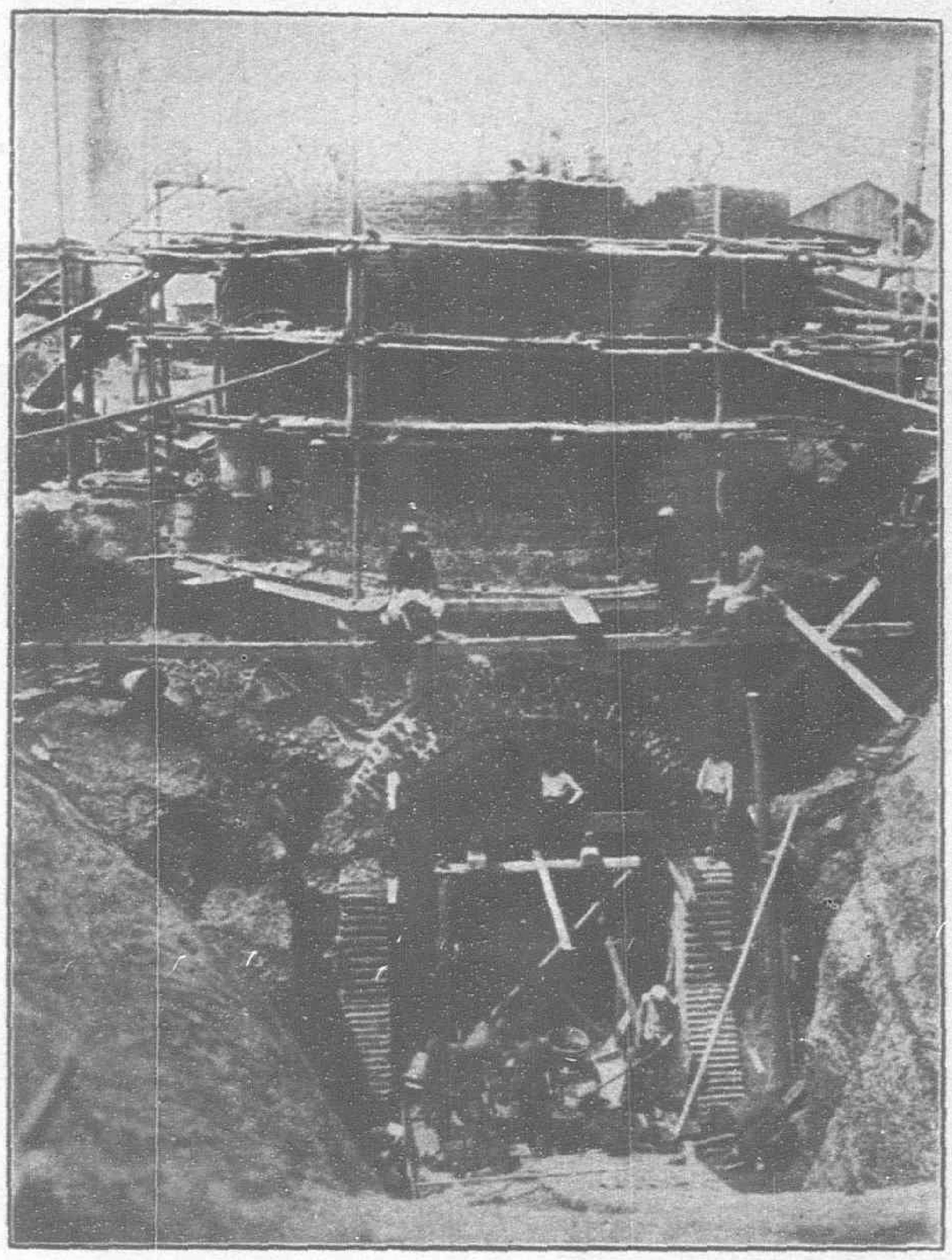

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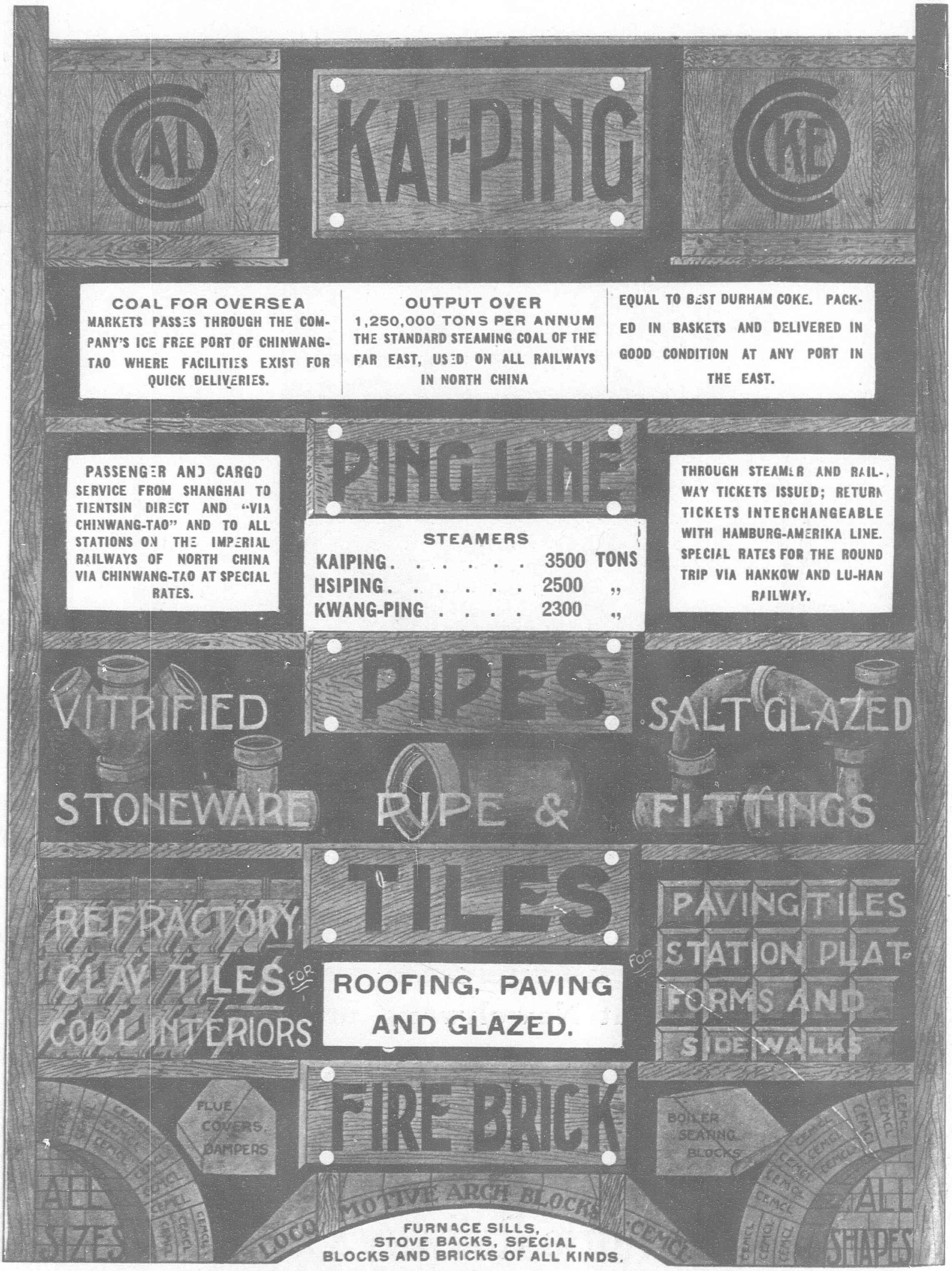

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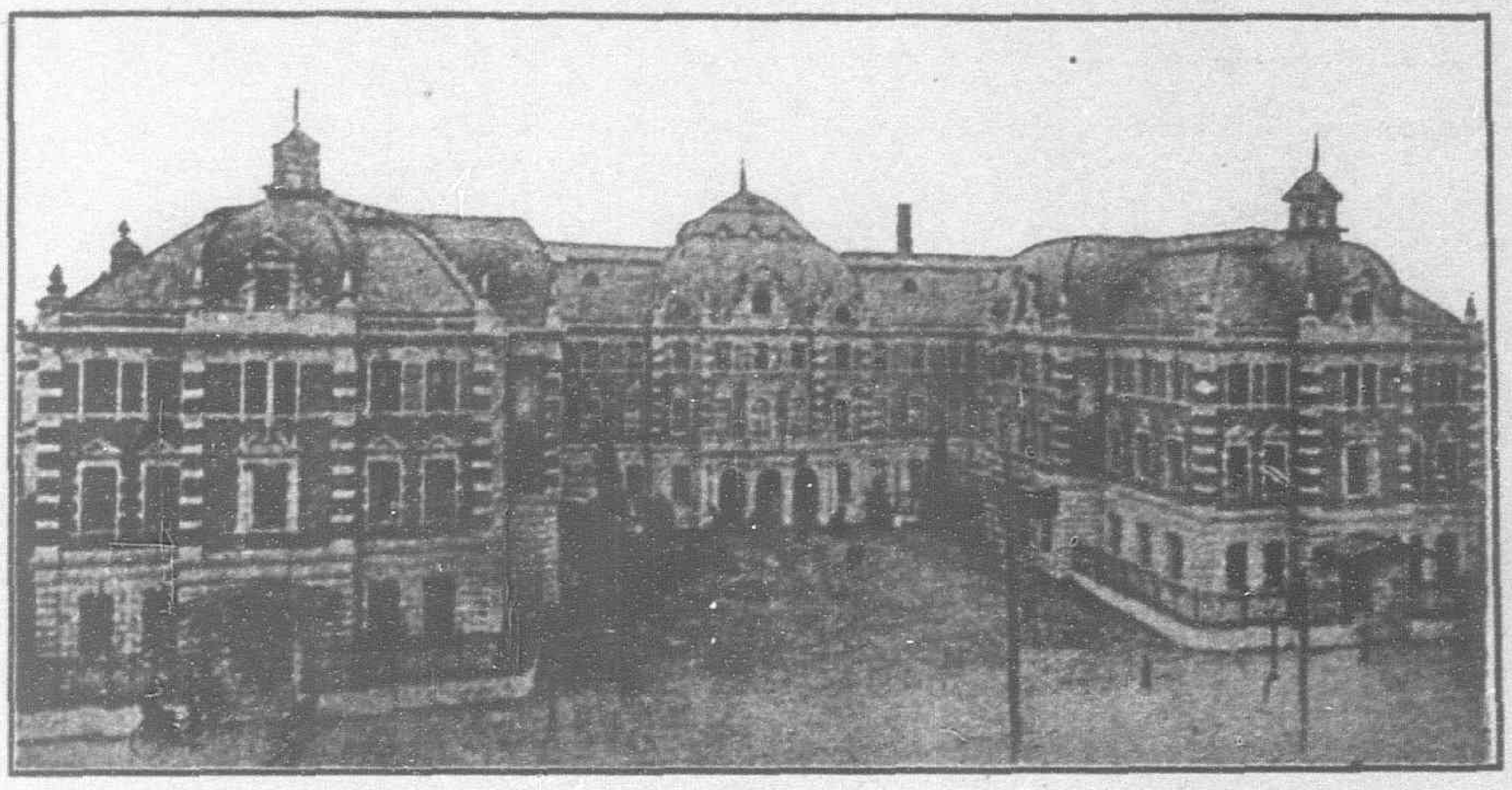

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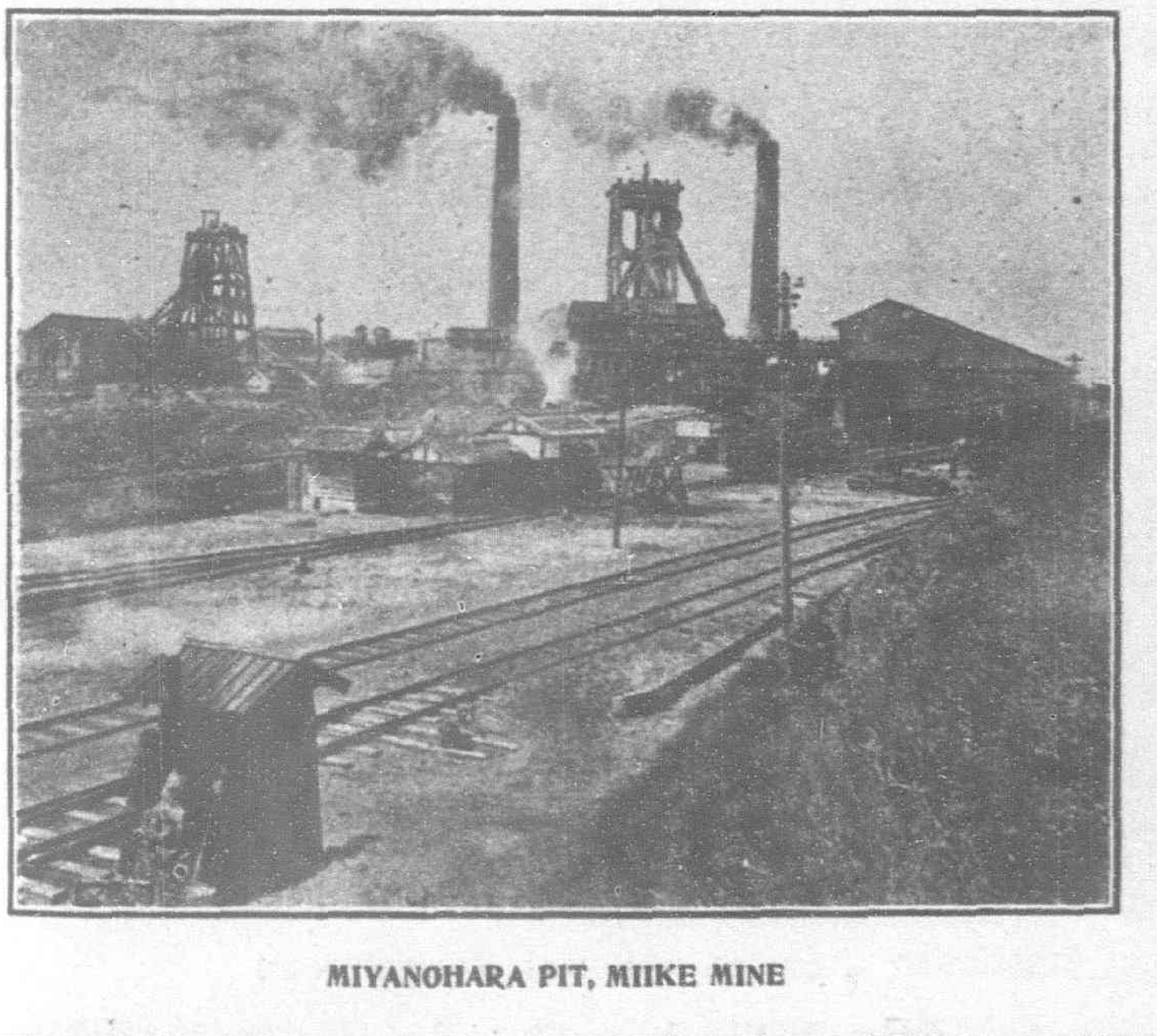

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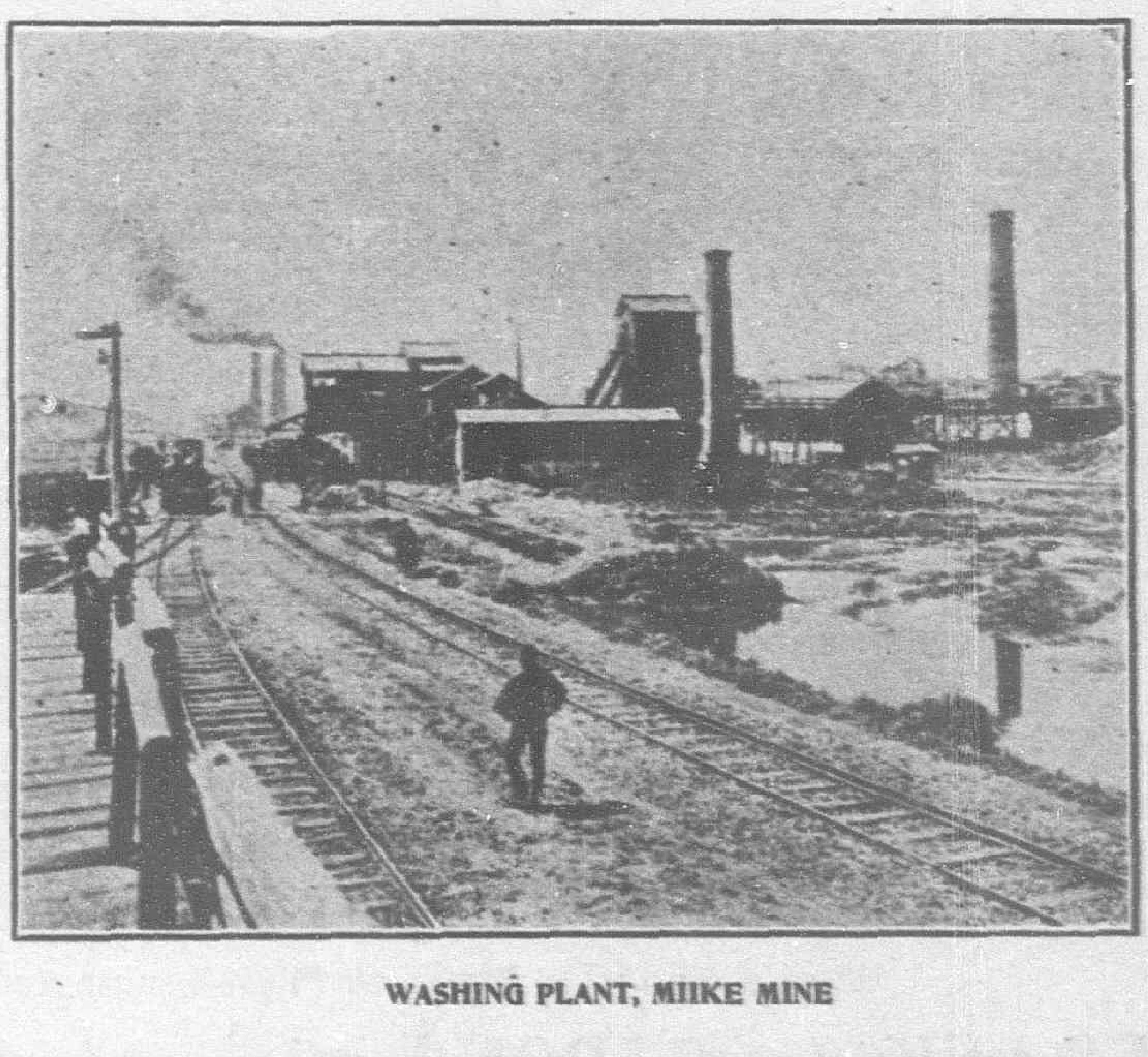

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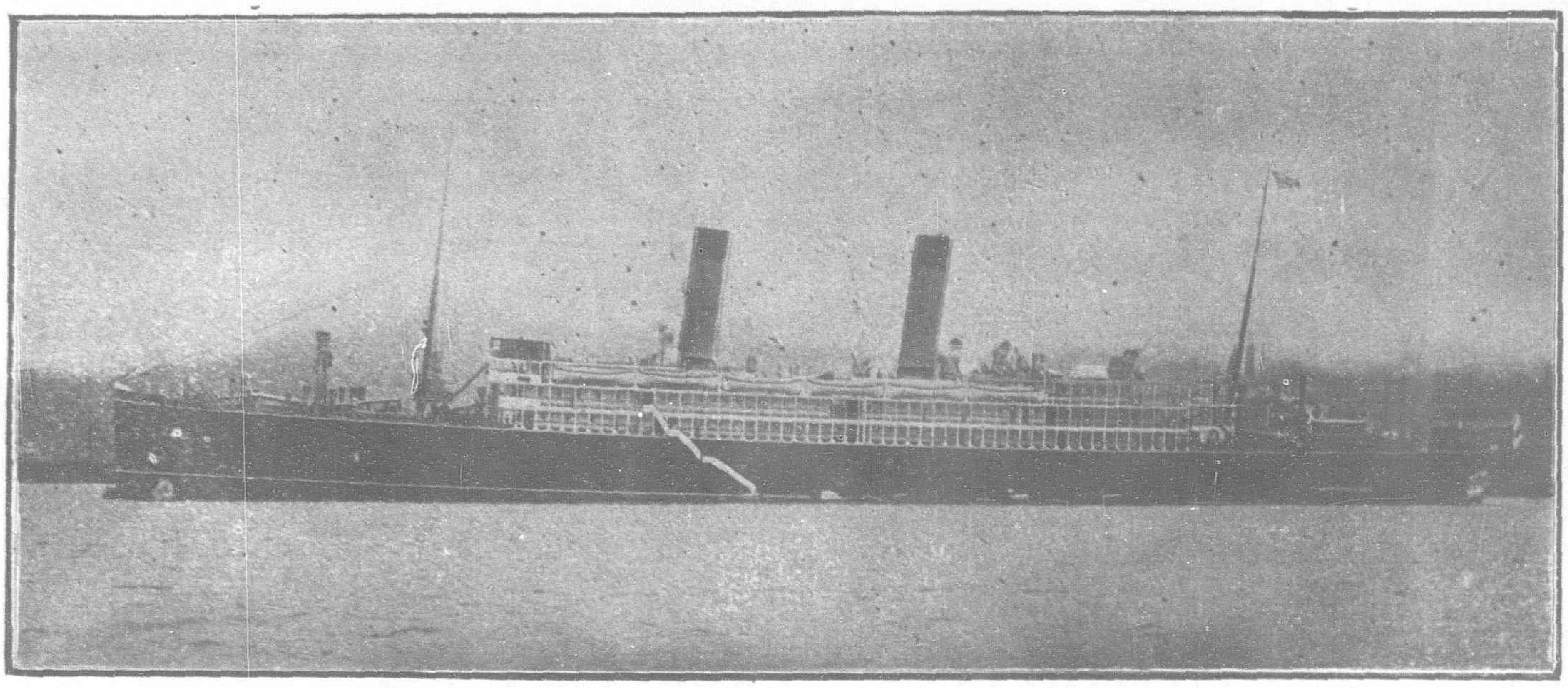

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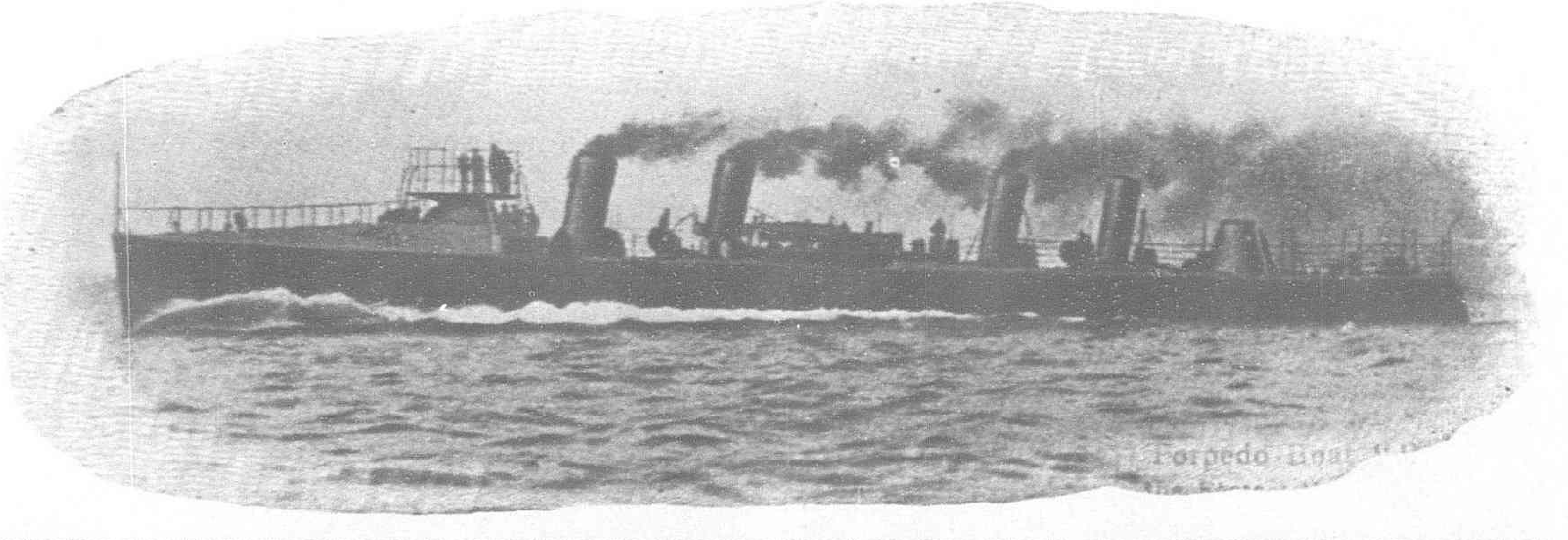

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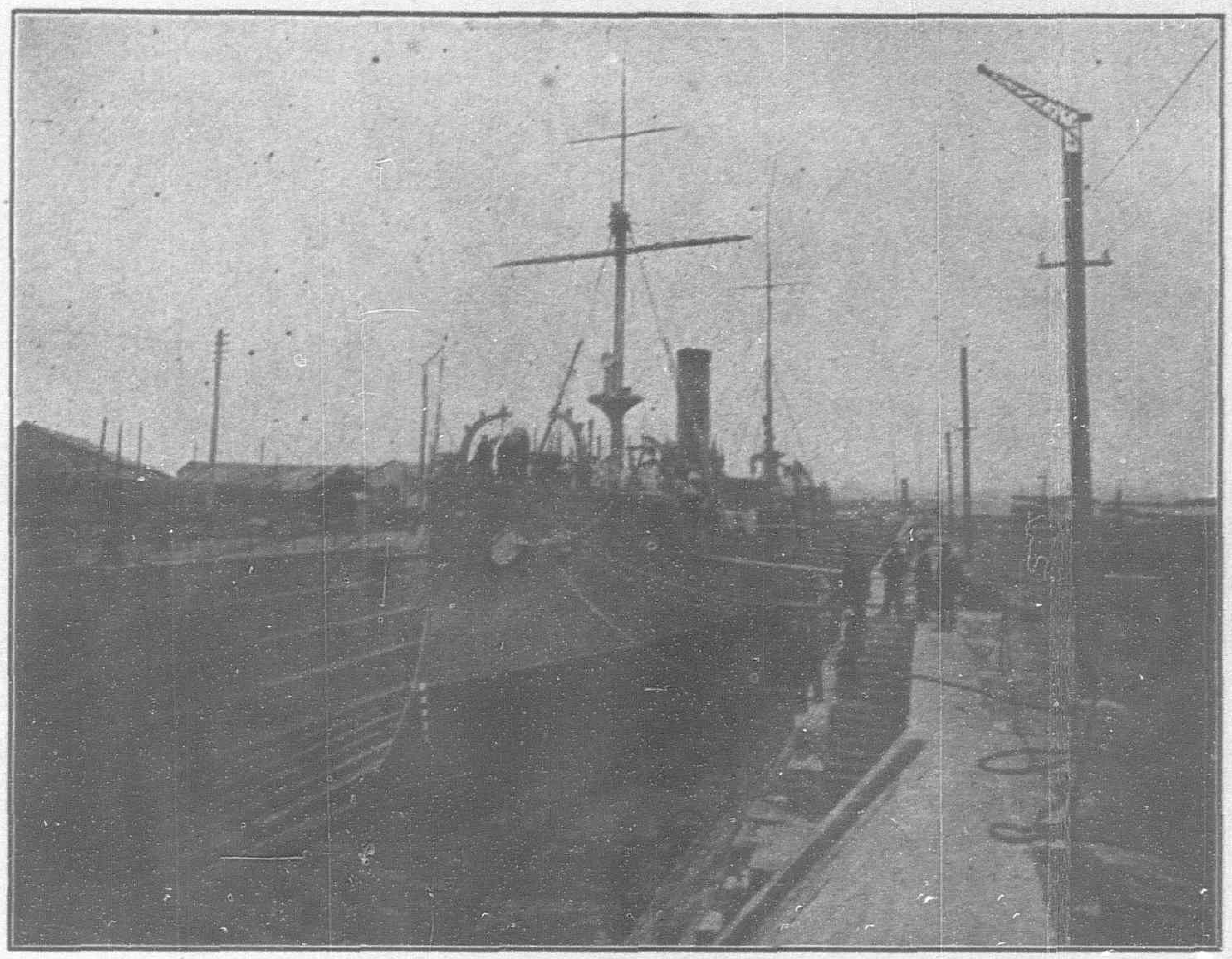

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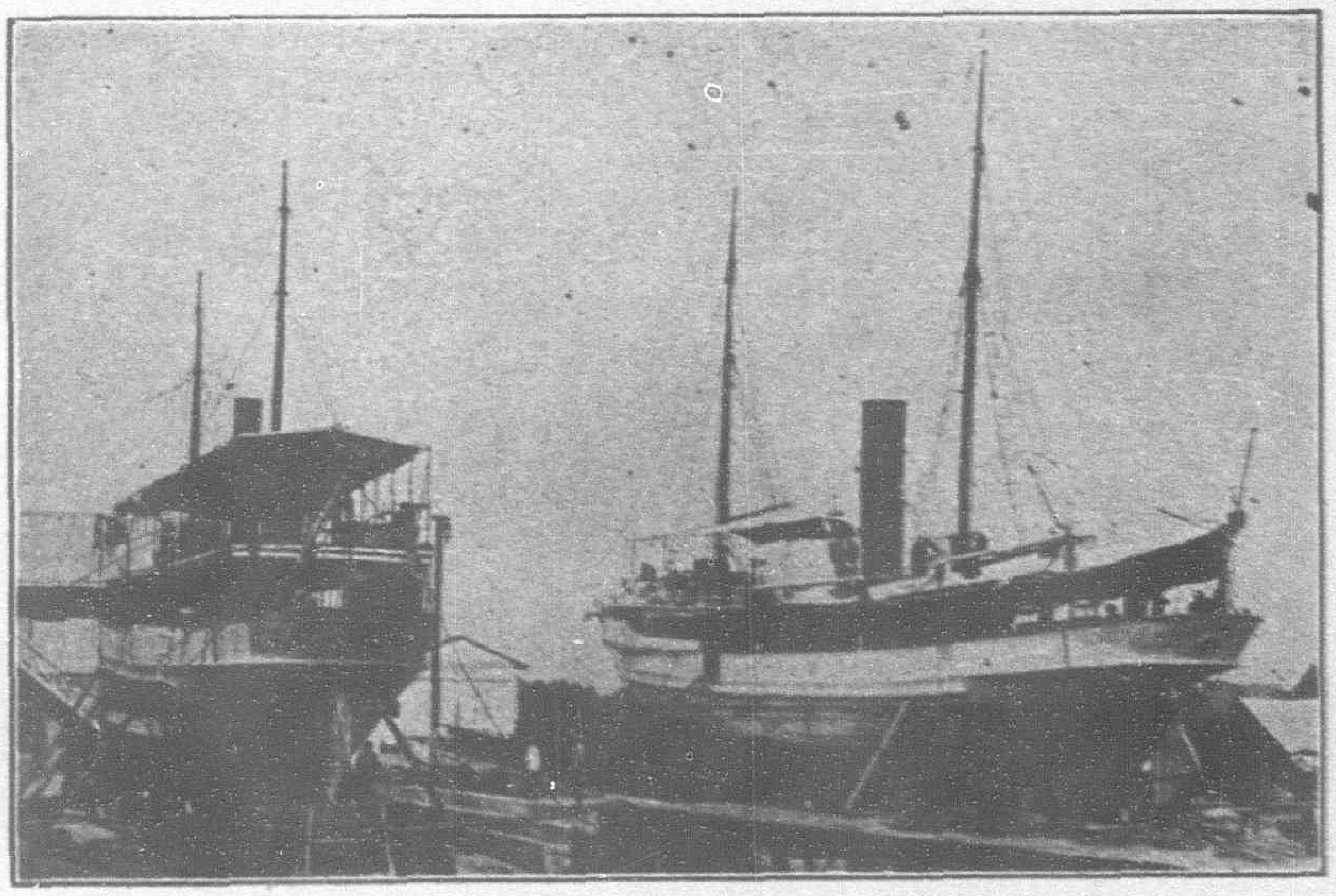

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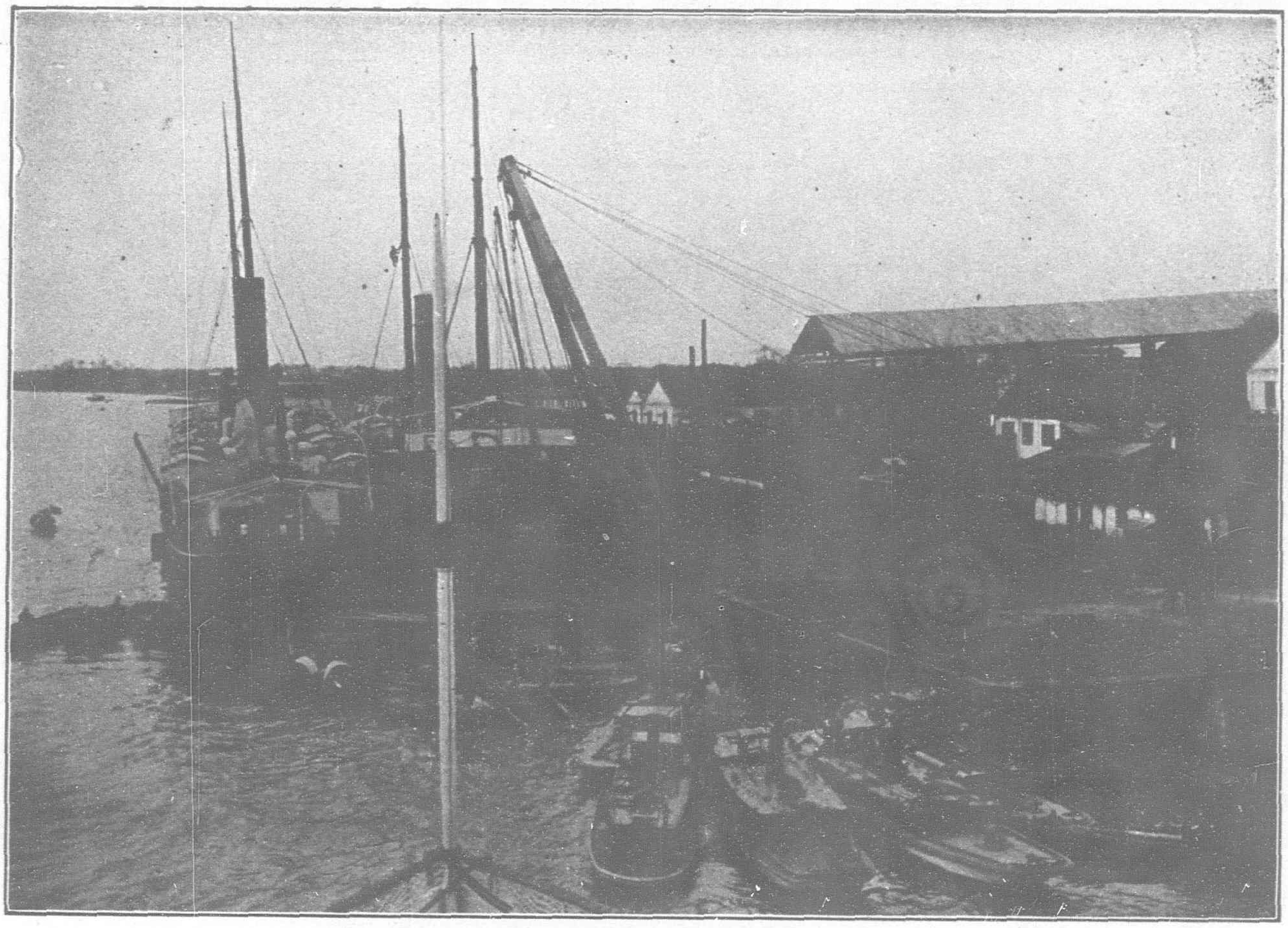

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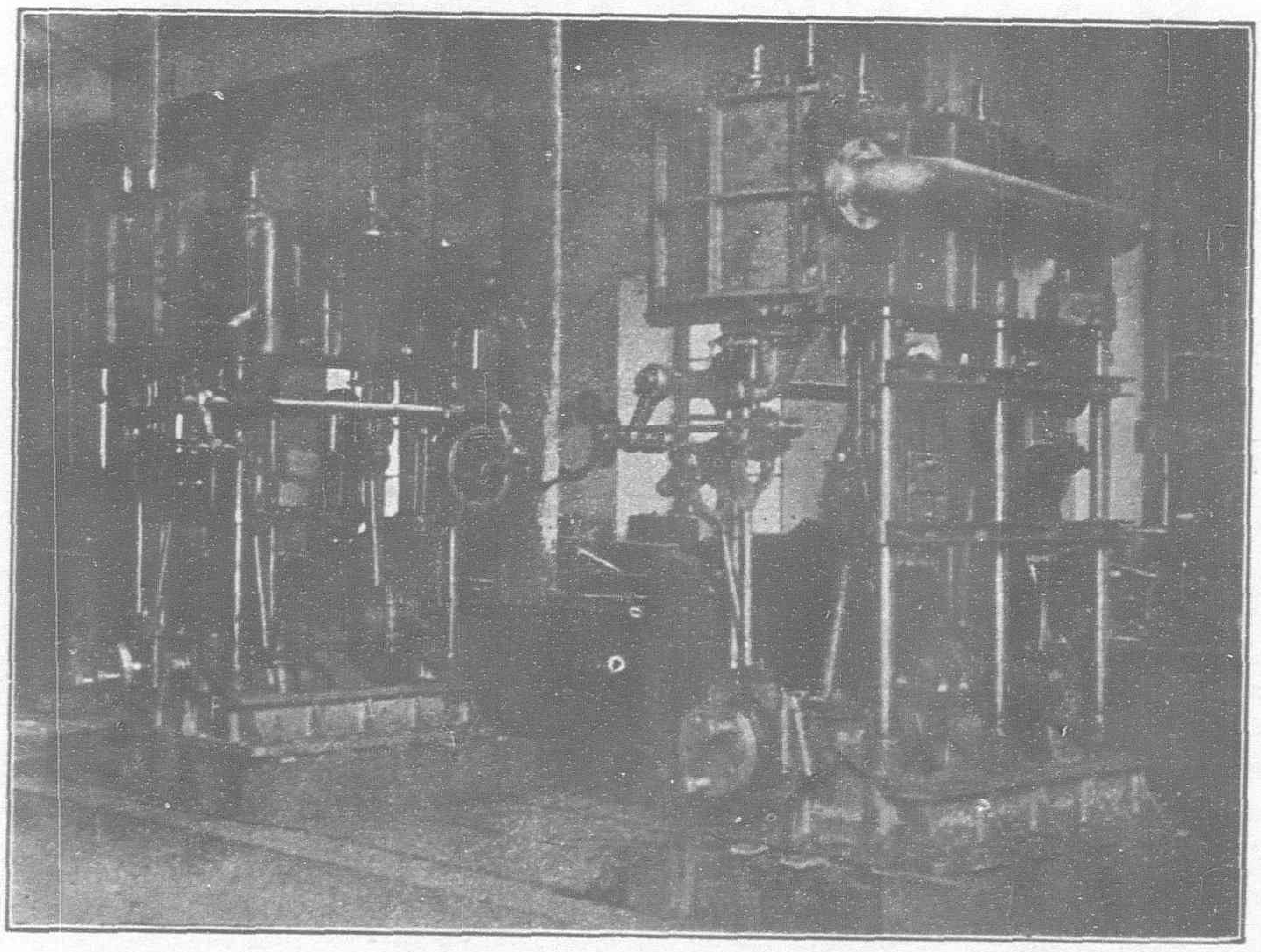

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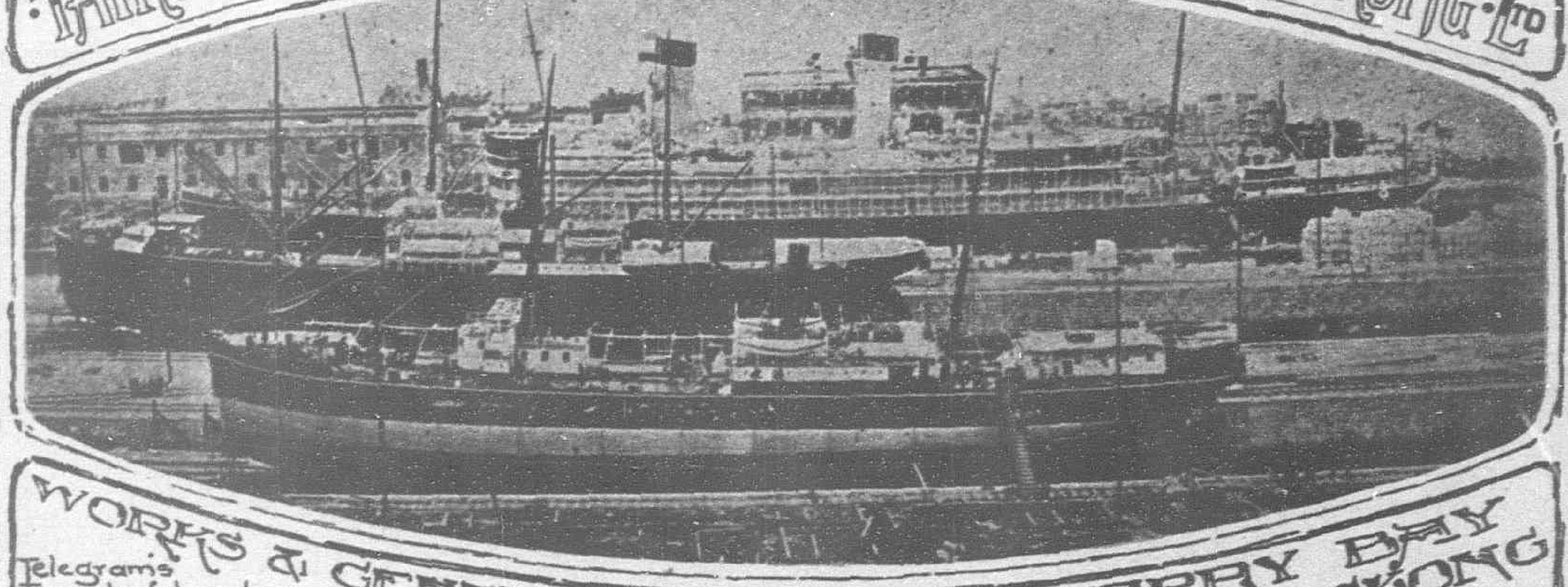

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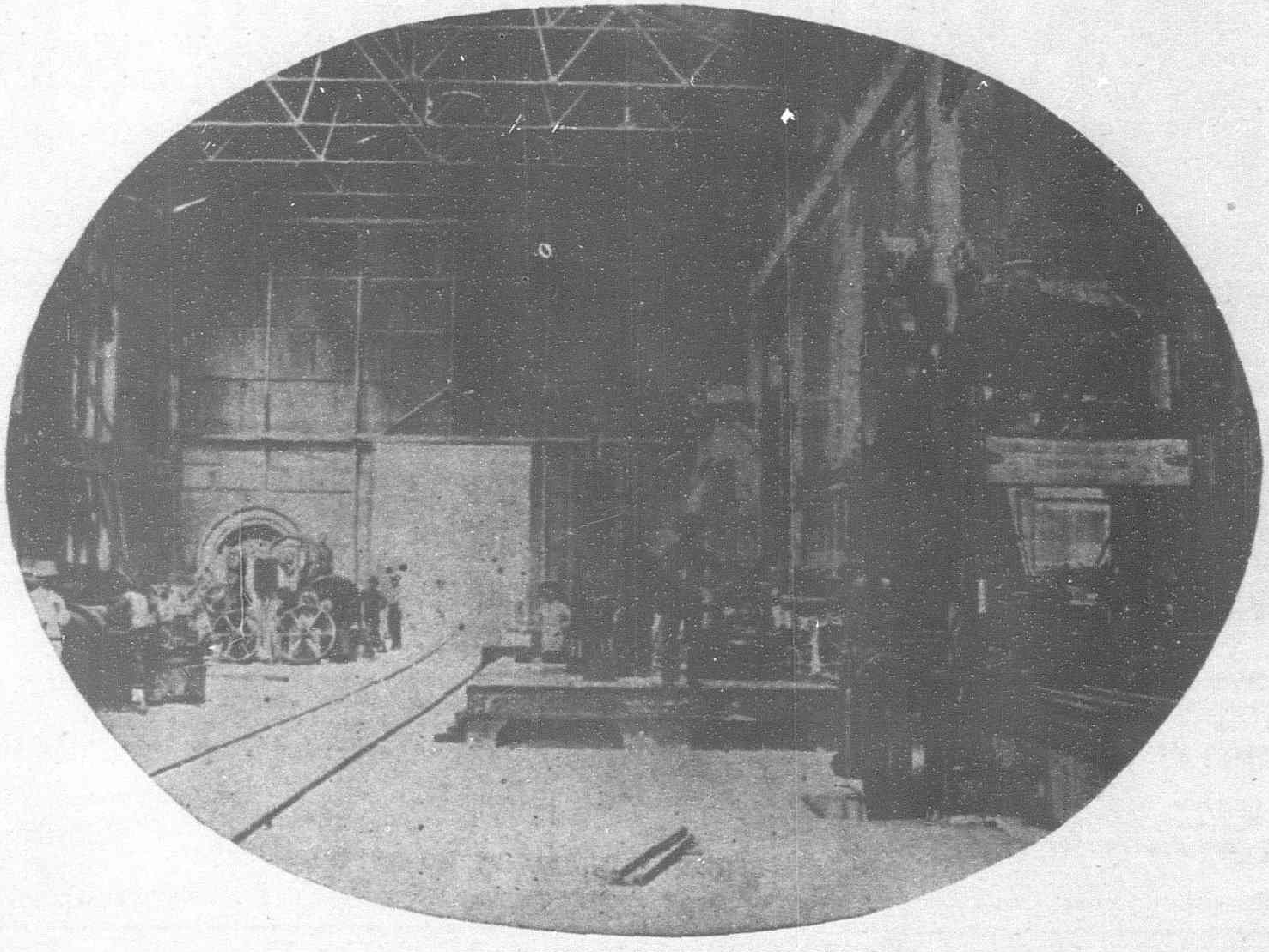

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THE POWER FOR THE ESTABLISHMENT is generated by Gas Producers, on the Mond System, supplying 4 Cockerill Gas Engines of 3,000 collective horse power, driving Electrical Generators, and is transmitted throughout the Works by means of Electrical Motors.

AN ELECTRIC DERRICK CRANE capable of lifting weights up to 100 tons, is erected on the Sea Wall, and 14 Electric Overhead Travelling Cranes ranging from 5 tons to 100 tons, are fitted throughout the Workshops.

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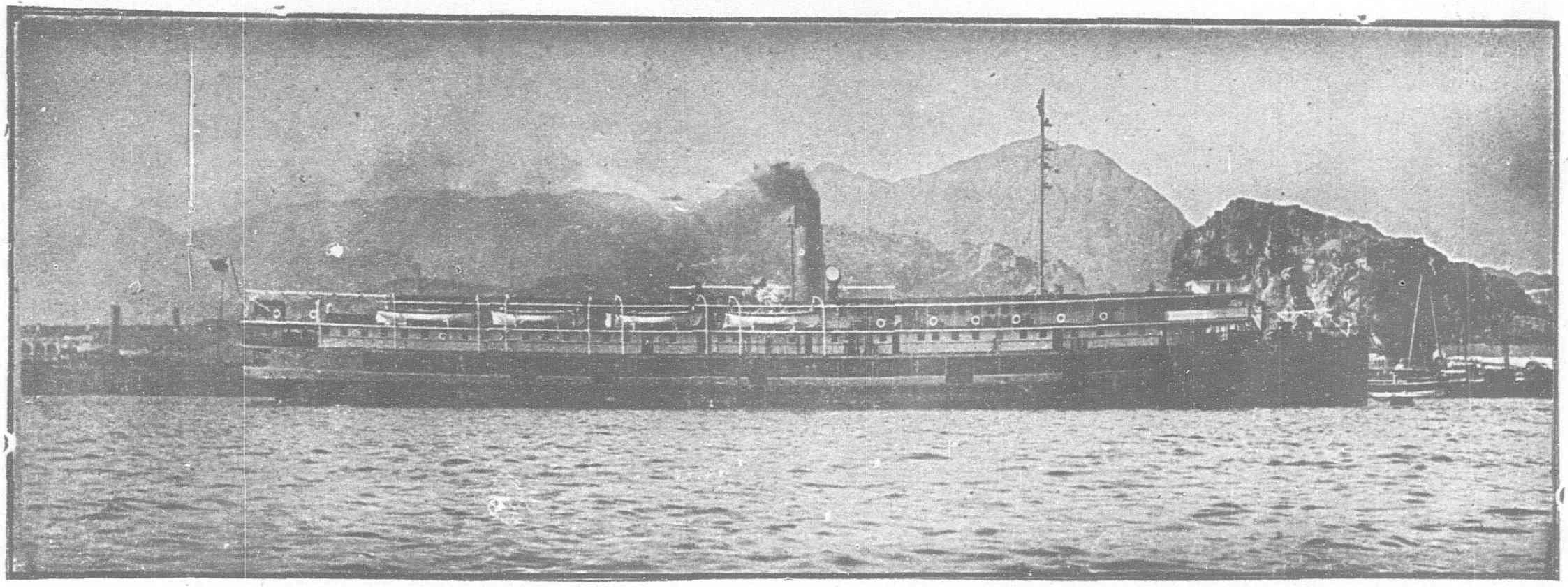

YANGTSZE RIVER STEAMER **LOONG-WO** BUILT BY THE HONGKONG AND WHAMPOA DOCK COMPANY, LTD.

The Company has SIX GRANITE DOCKS and TWO PATENT SLIPS of the following dimensions:—

Name of Dock or Slip	Length on Keel Blocks	Entrance Breadth	Depth Over Sill at Ordinary Spring Tides	Rise of Tide	
				Springs	Neaps
KOWLOON	Feet	Feet	Feet	Feet	Feet
No. 1 Dock, Kowloon.........	576	86 ft top 70 ft bottom	30′	7′ 6″	3
No. 2 Dock, Kowloon	371	74′	18′ 6″	7′ 6″	—
No. 3 Dock, Kowloon.	264	49′ 3″	14′	7′ 6″	—
Patent Slip, No. 1, Kowloon...	240	60′	14′	7′ 6″	—
Patent Slip, No 2, Kowloon...	220	60′	12′	7′ 6″	—
TAI-KOK-TSUI					
Cosmopolitan Dock..........	466	85′ 6″	20′	7′ 6″	—
ABERDEEN					
Hope Dock	430	84′	23′	7′ 6″	—
Lamont Dock..........	333	64′	16′	7′ 6″	—

THE COMPANY'S DOCKS at KOWLOON, TAI-KOK-TSUI and ABERDEEN are in efficient working order, and the attention of Captains and Shipowners is respectfully solicited to the advantages which these Establishments offer for Docking and Repairing Vessels.

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BOILER PRESERVATIVE E. prevents corrosion and the formation of scale. In boilers where corrosion is taking place it will effectually check it, and all scale will be entirely removed. The use of zinc plates and soda is dispensed with. By using **PRESERVATIVE E.** a boiler can be kept in better condition and at less cost. It is used by all the leading steamship lines and in many large power installations and mills. For water-tube boilers it is especially recommended, as no matter how bad the feed water no scale is deposited on the heating surfaces, nor is corrosion allowed to take place.

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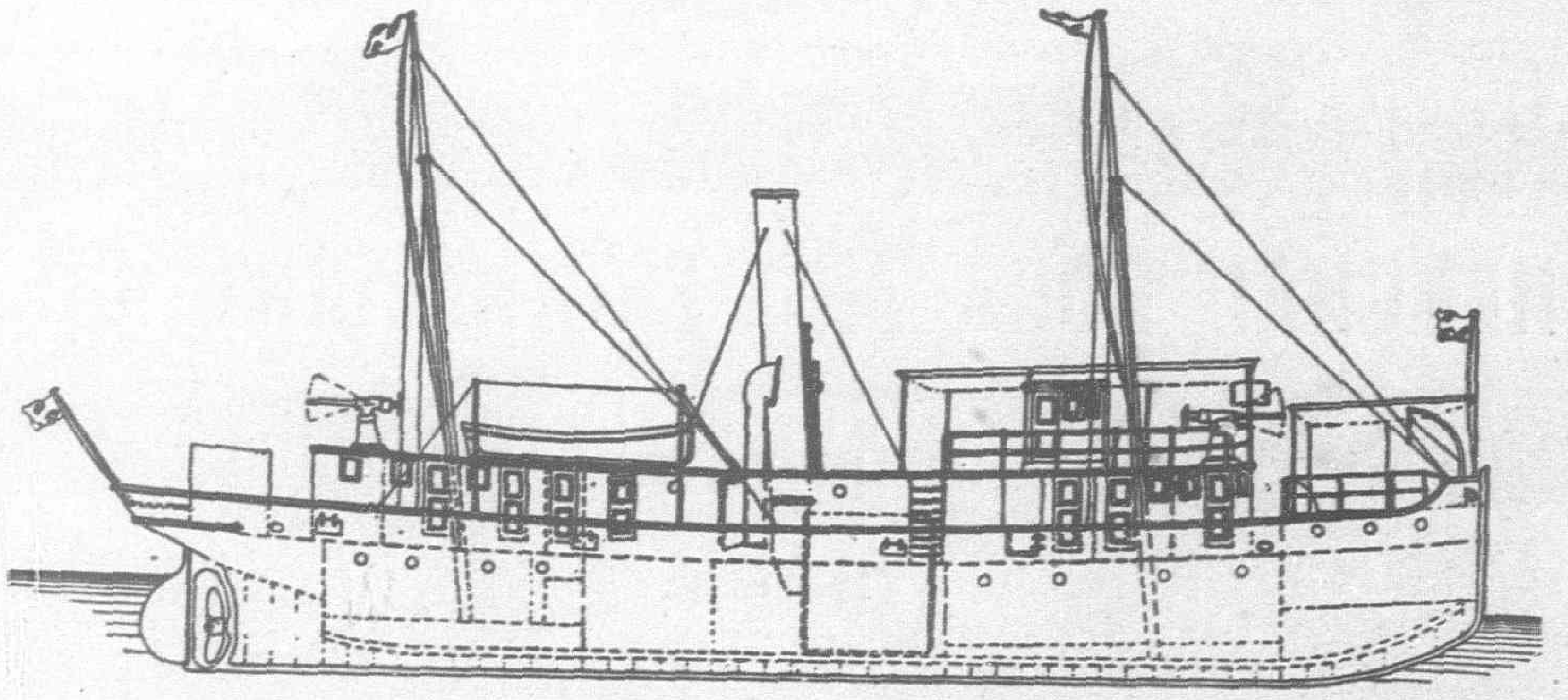

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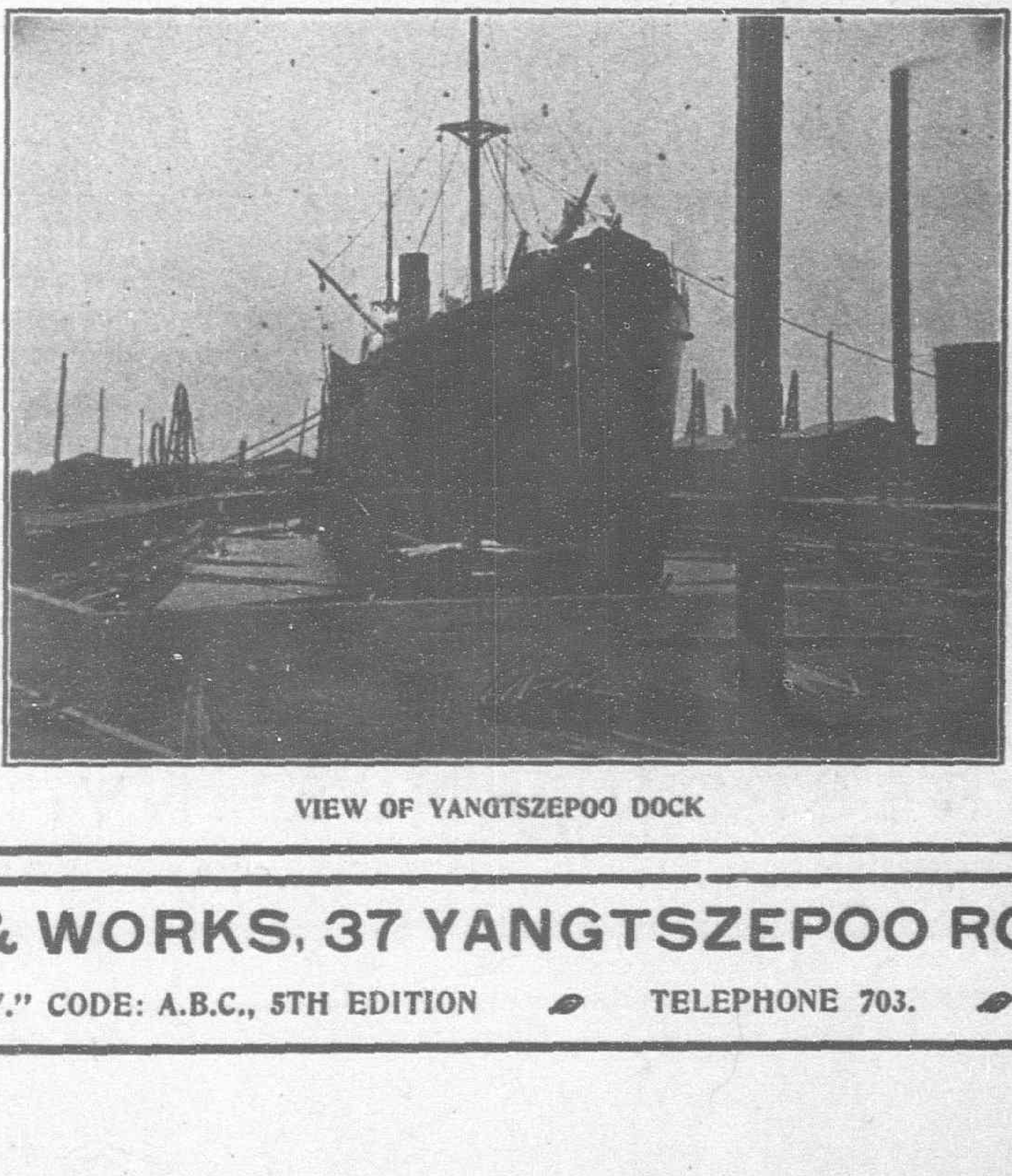

VIEW OF YANGTSZEPOO DOCK

PARTICULARS OF DOCK
LENGTH ON BLOCKS 455'0"
" OVERALL - 460'0"
WIDTH, ENTRANCE 74'0"
" SILL - - 64'0"
DEPTH ON SILL, (H. W. O. S. TIDES) - - - 21'0"
DEPTH ON 3'0" BLOCKS (H. W. O. S. TIDES) 19'0"
PUMPS CAN EMPTY DOCK WITHOUT VESSEL IN, IN 3½ HOURS.
WORKSHOPS LOCATED AT HEAD OF DOCK

OFFICE, DOCK & WORKS, 37 YANGTSZEPOO ROAD, SHANGHAI

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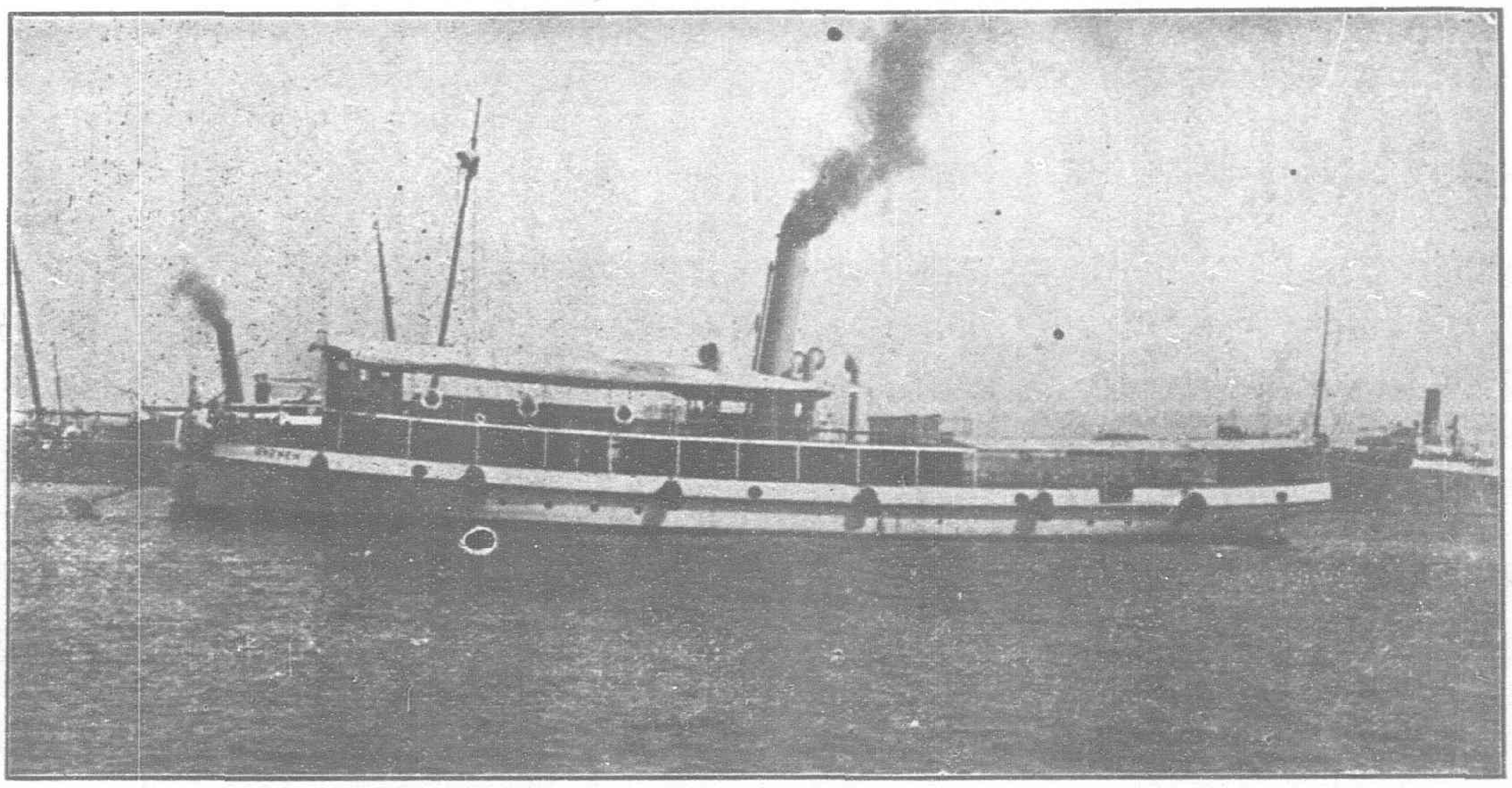

NORDDEUTSCHER LLOYD TENDER "BREMEN" BUILT BY THE SHANGHAI DOCK AND ENGINEERING COMPANY.

The Docks are five in number, ranging in length from 360 feet to 560 feet, and breadth of entrance from 57 feet to 82 feet, with the depth of water on the sill from 16 feet to 24 feet.

The Dock charges are very moderate.

The Water Frontage is about 1½ miles in length. Wharves and Pontoons are arranged where steamers can moor during repairs; and slips for hauling up small vessels are provided. Sheer legs capable of lifting 65 tons are placed at the various Docks.

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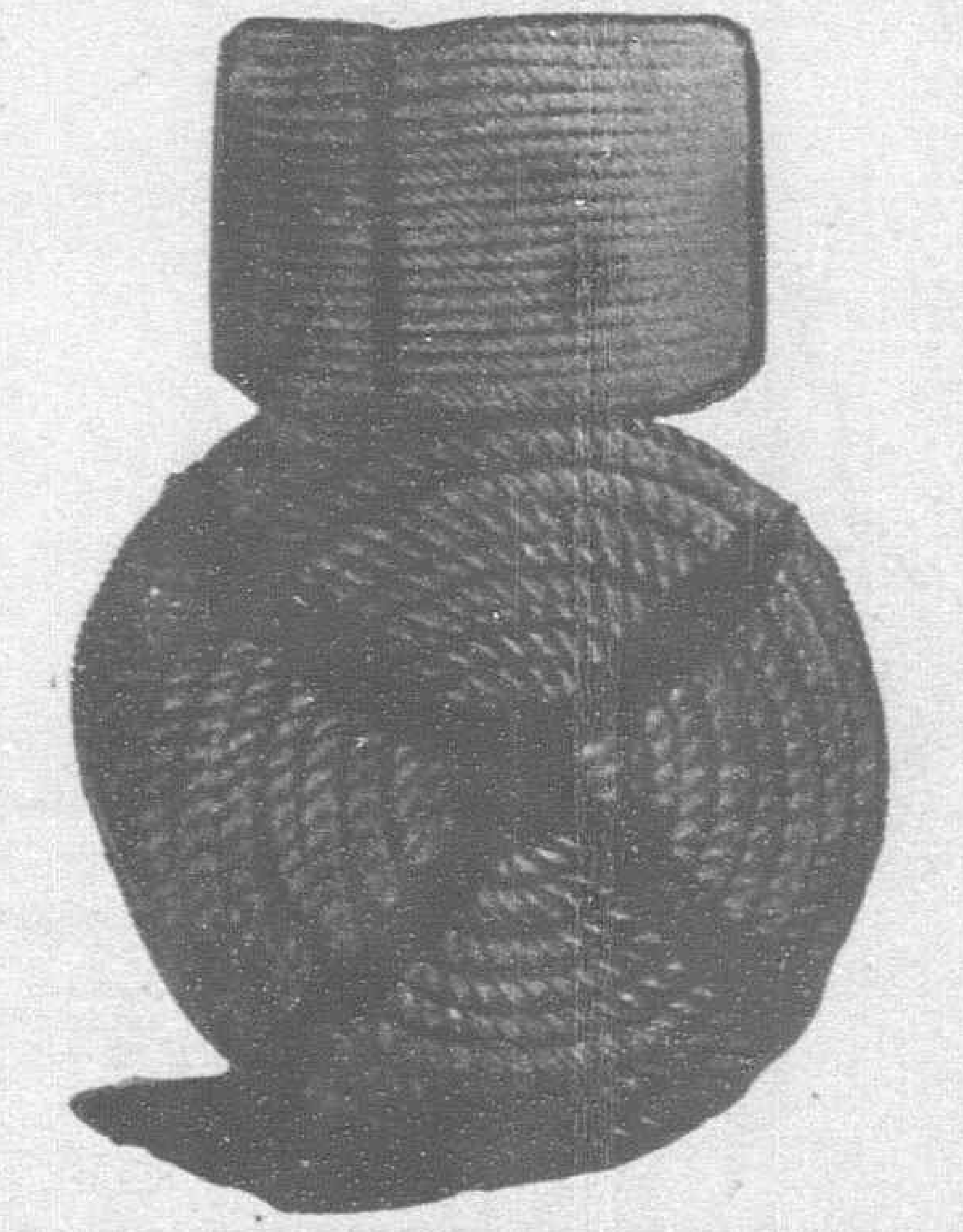

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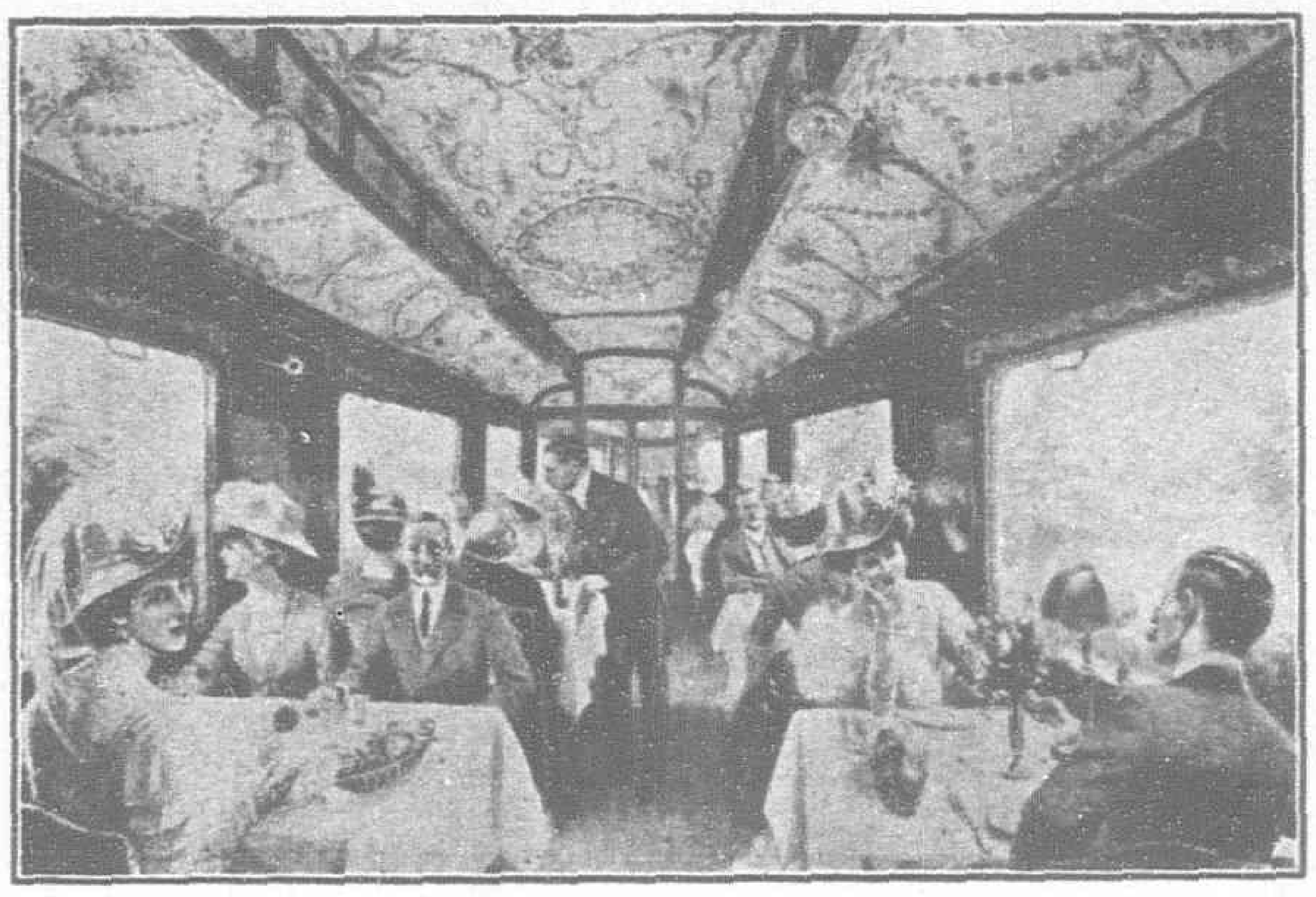

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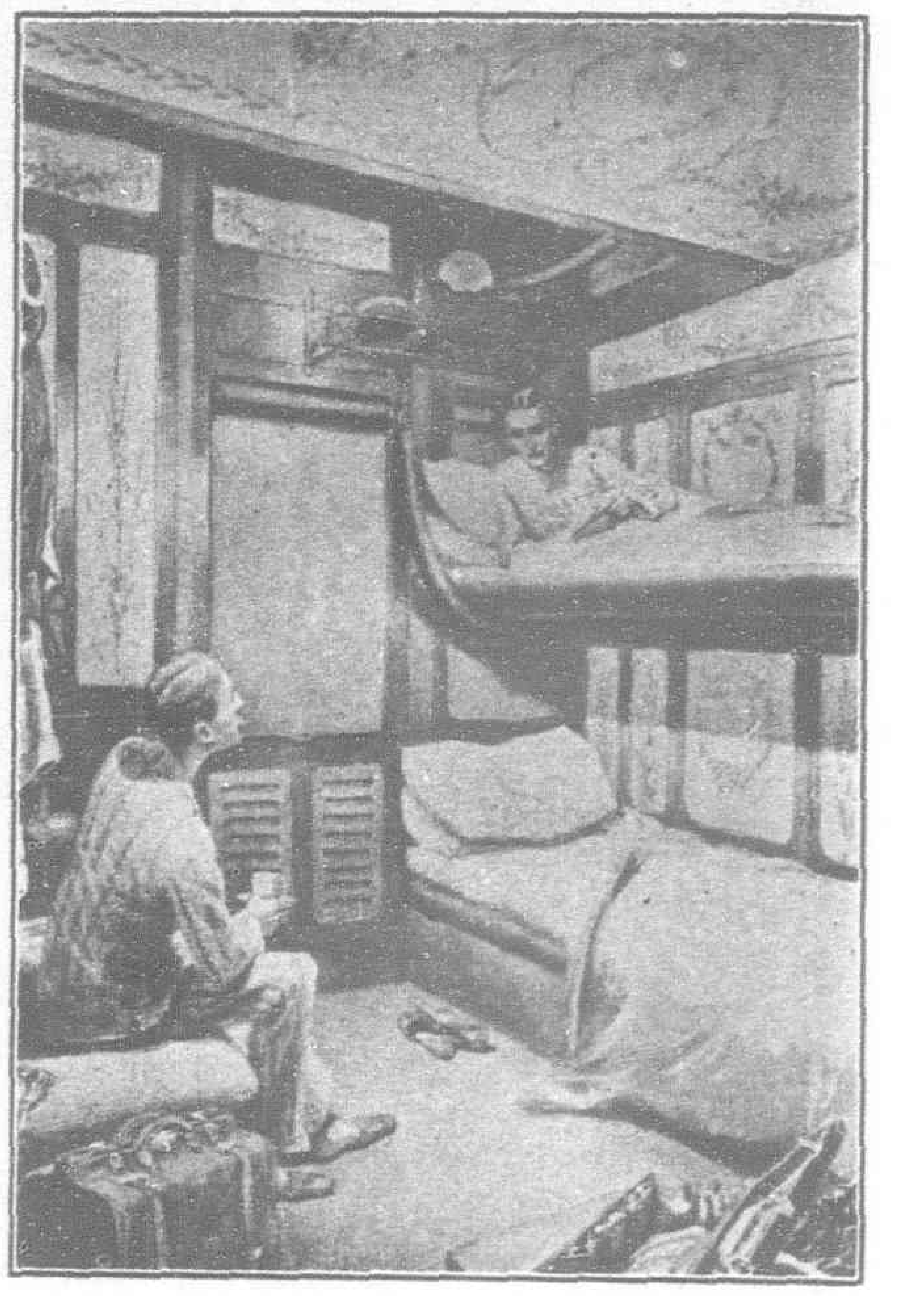

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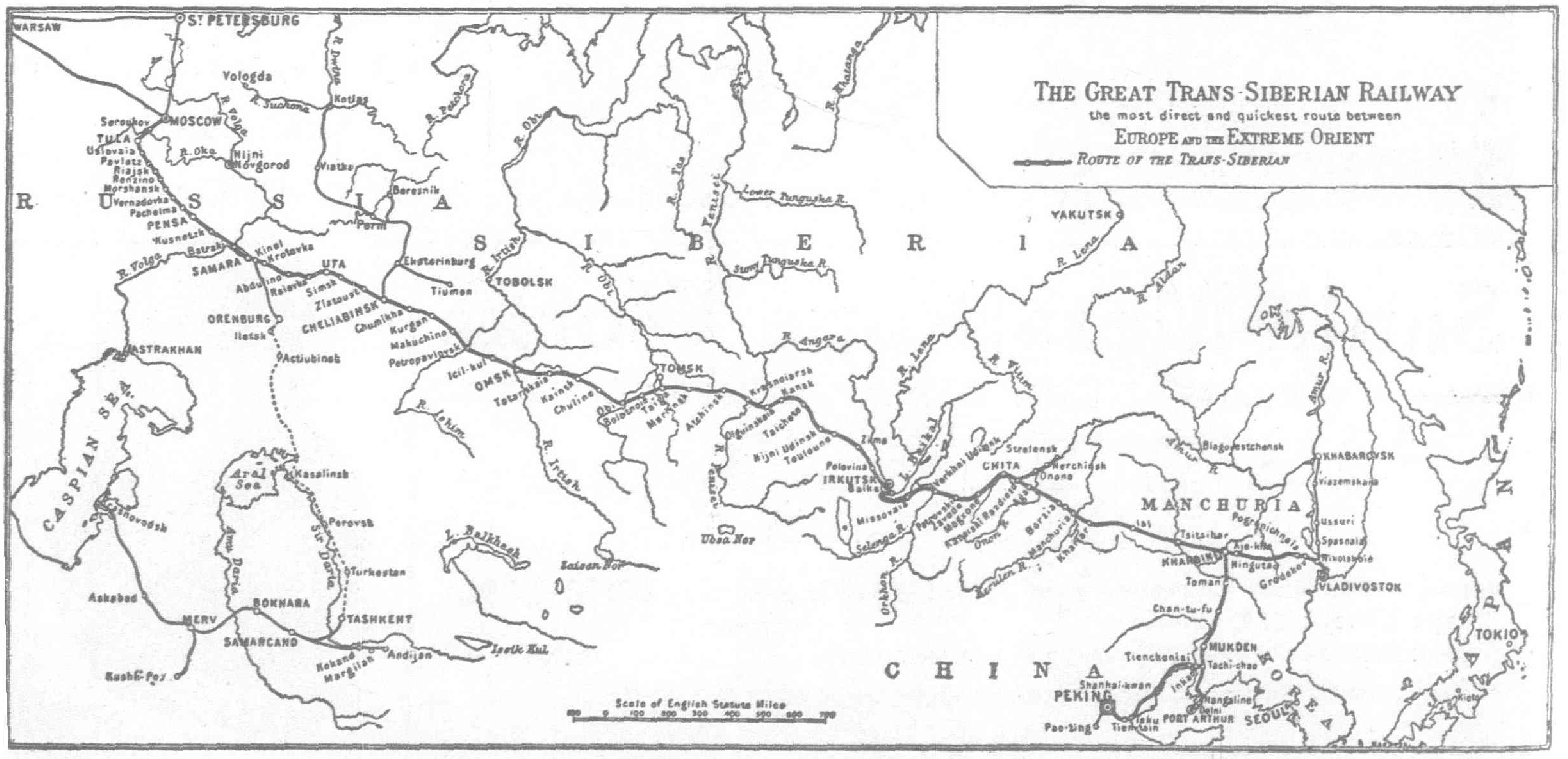

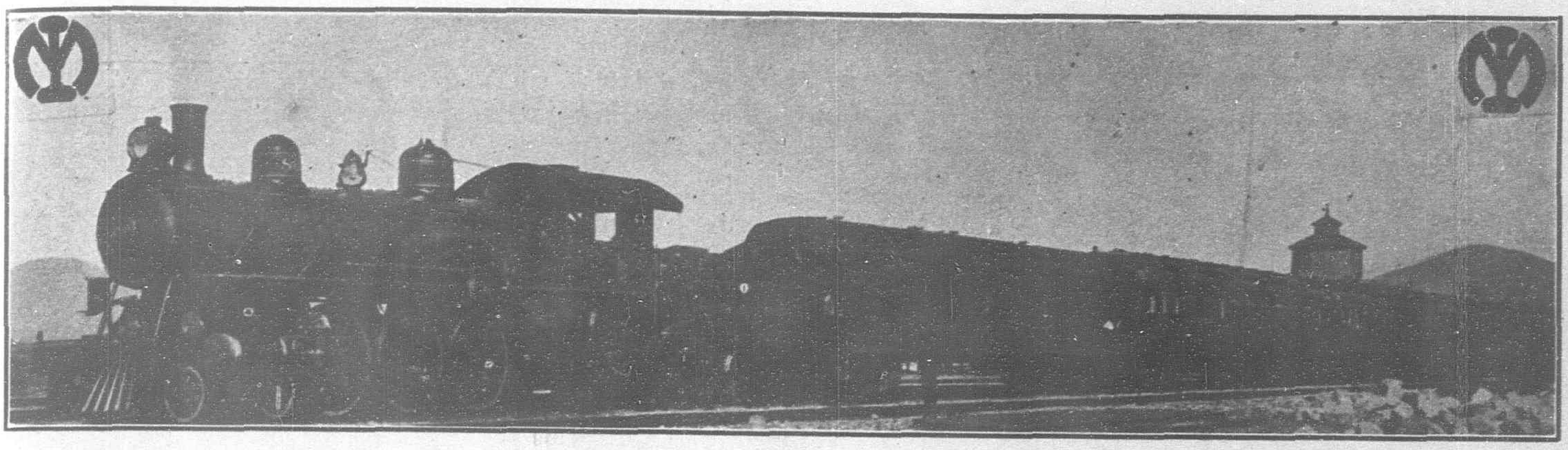

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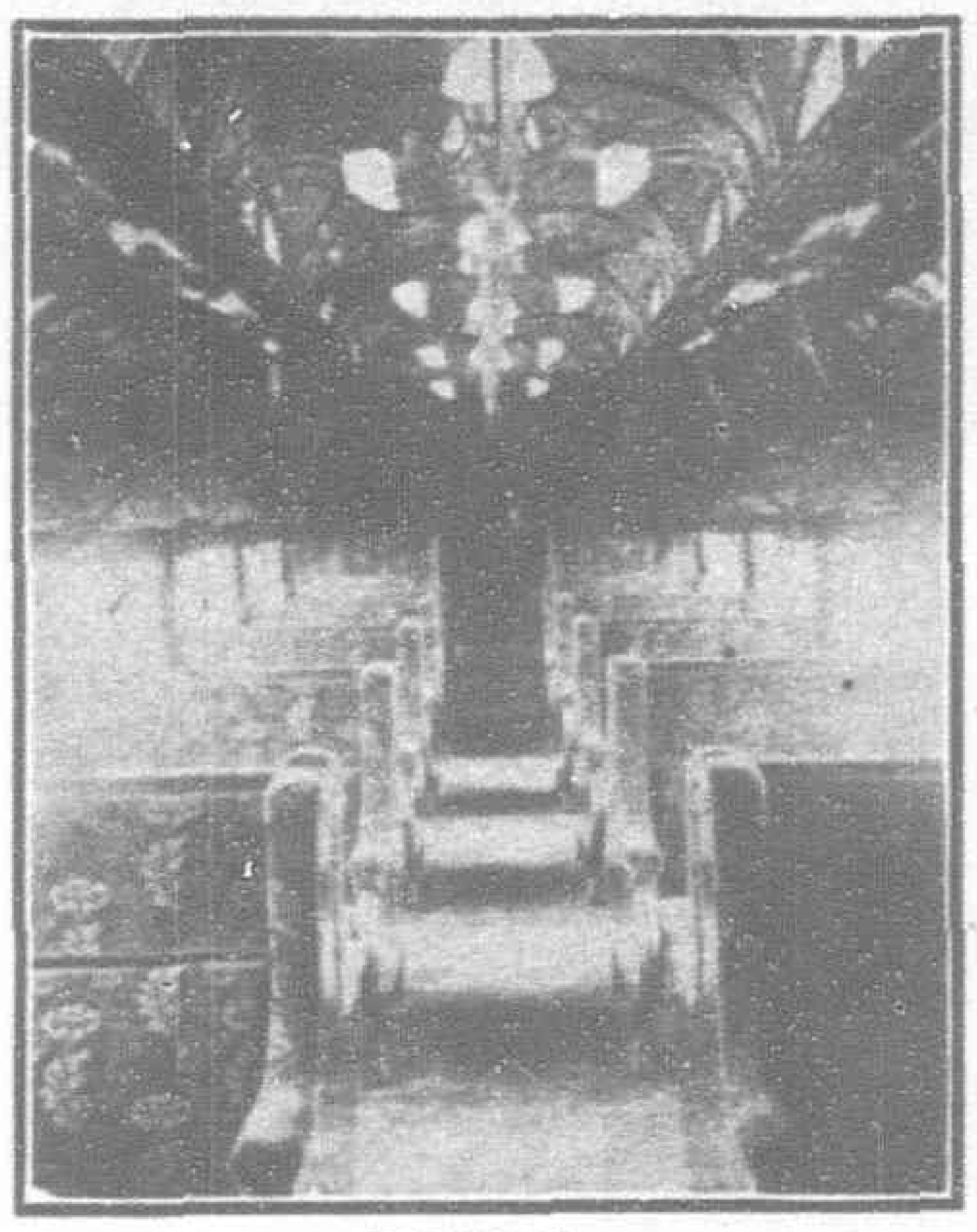

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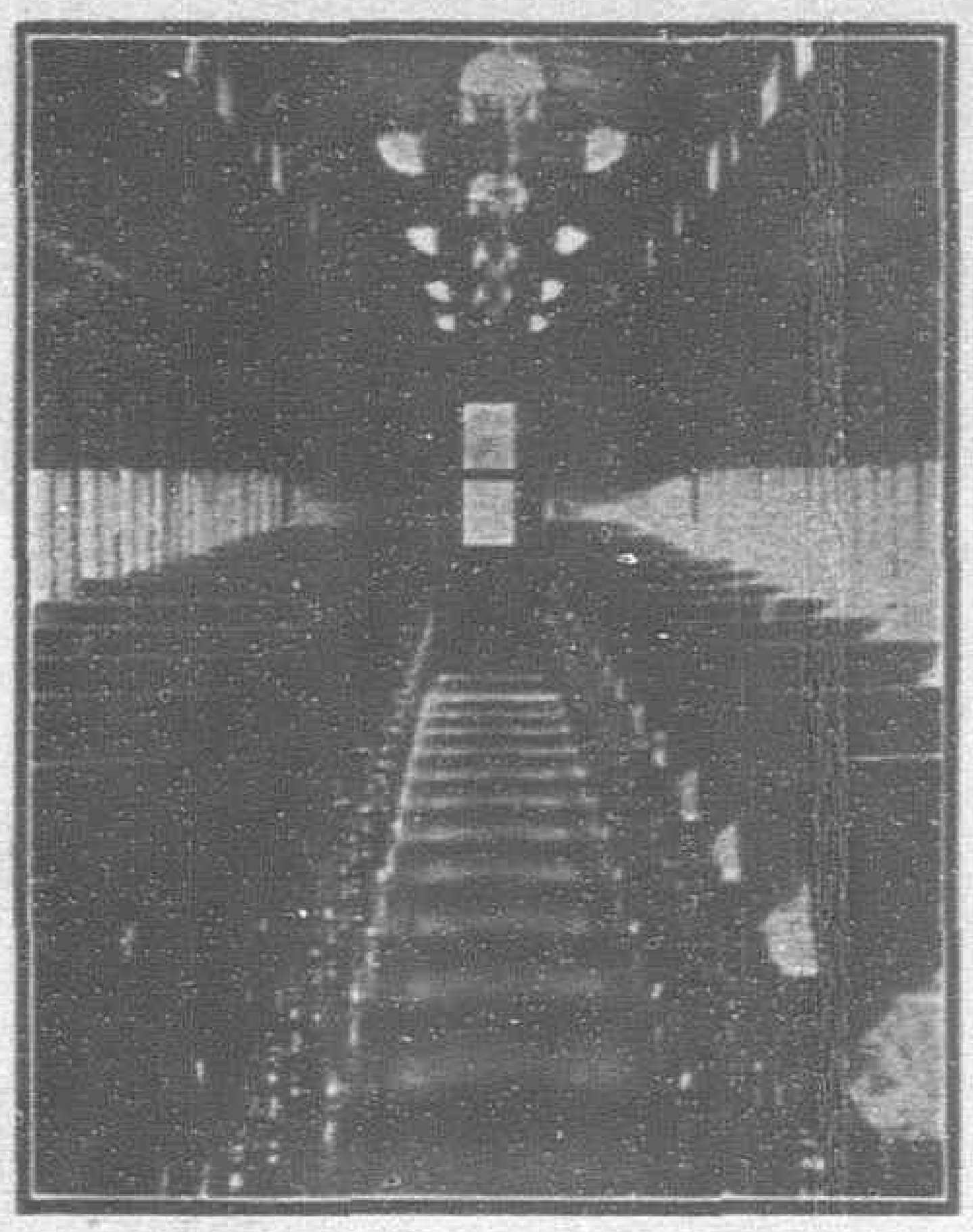

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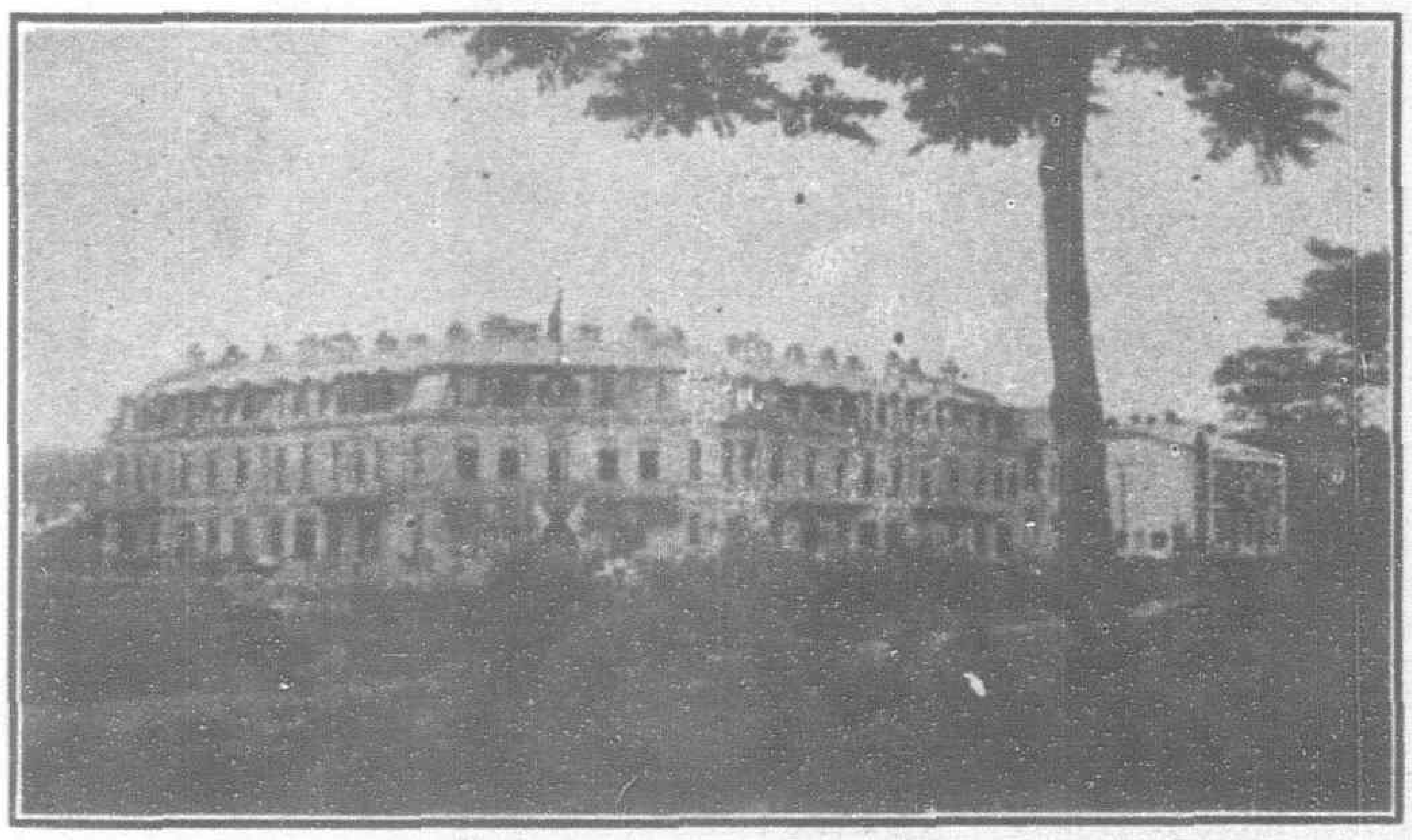

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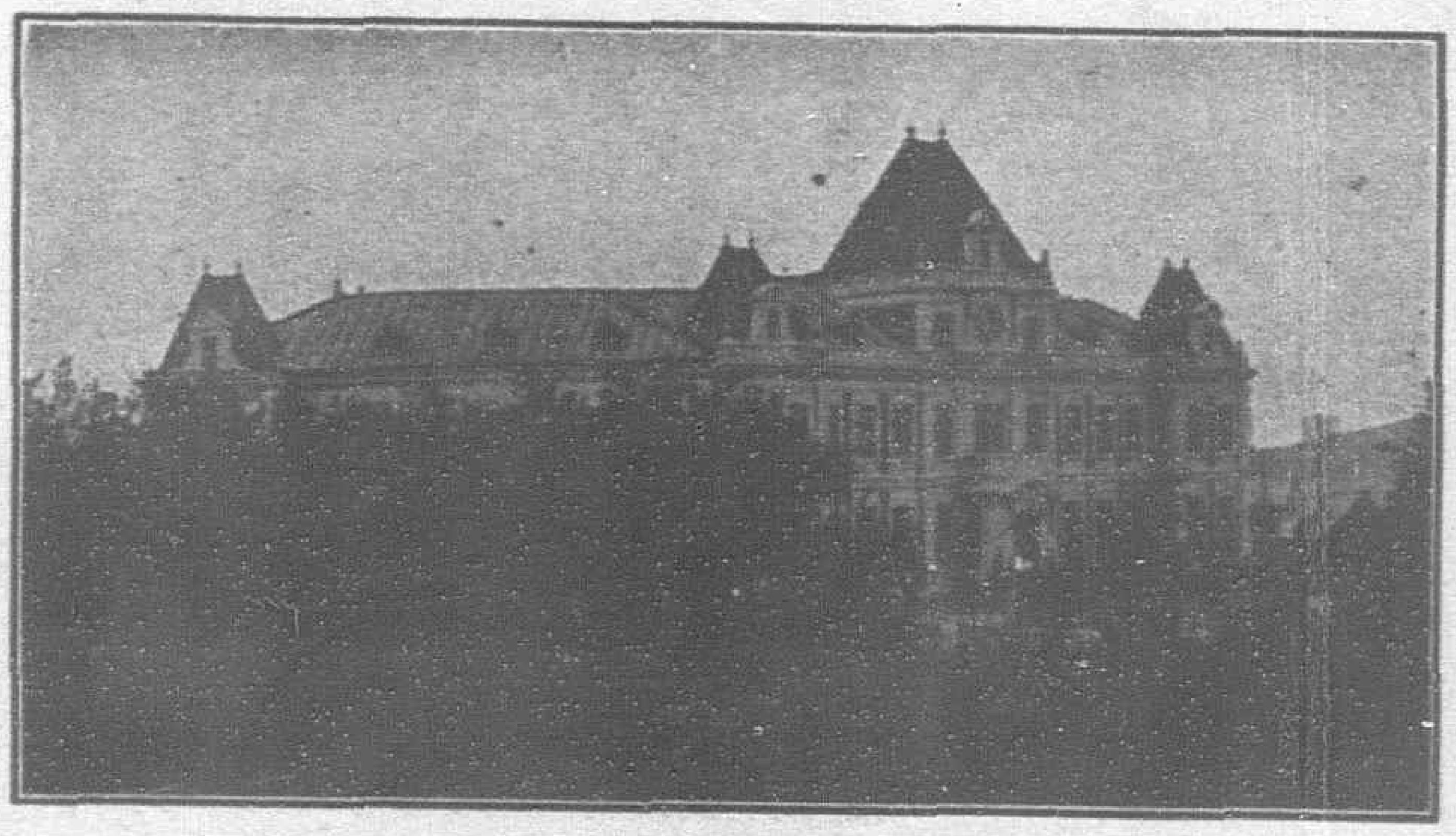

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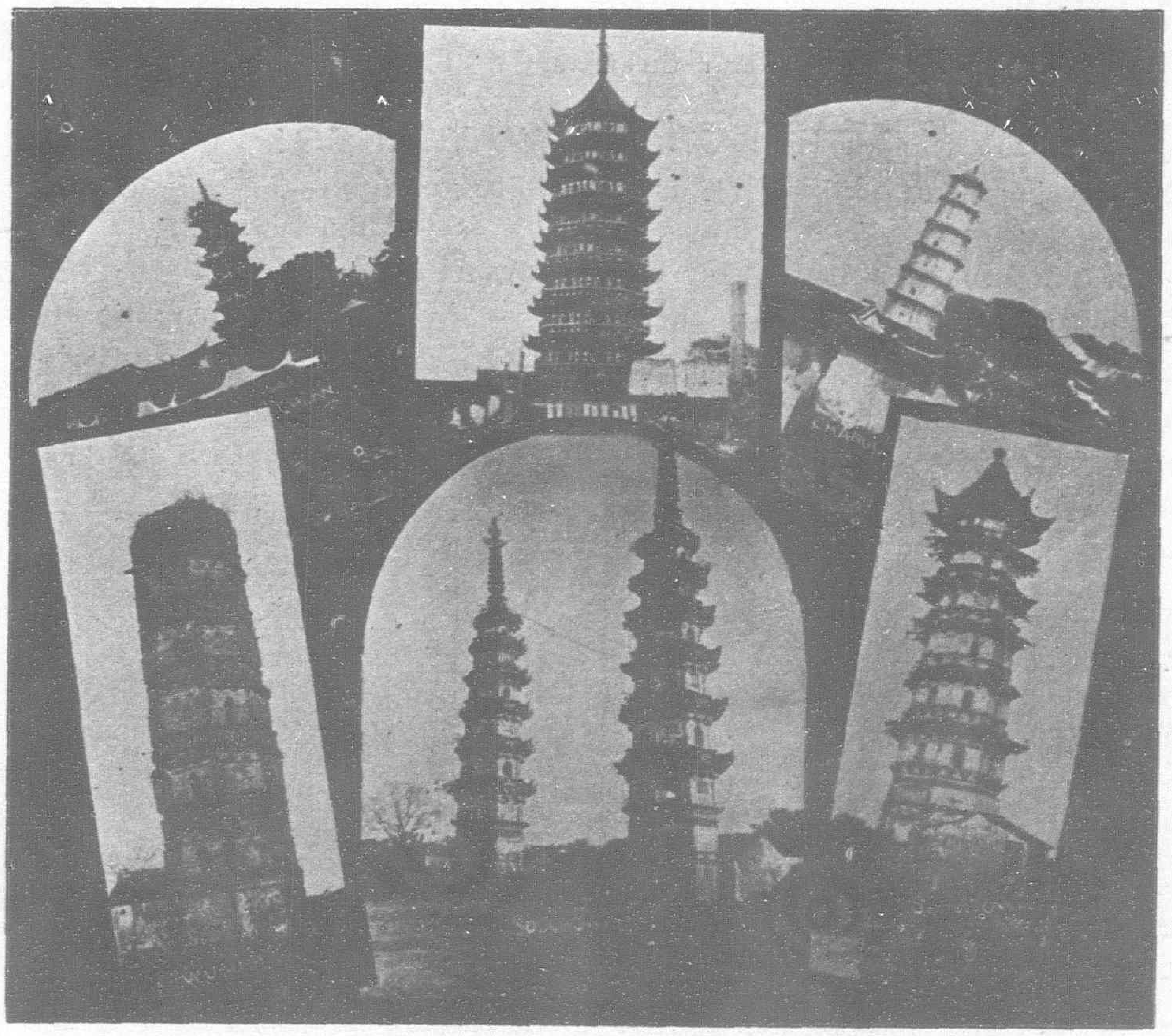

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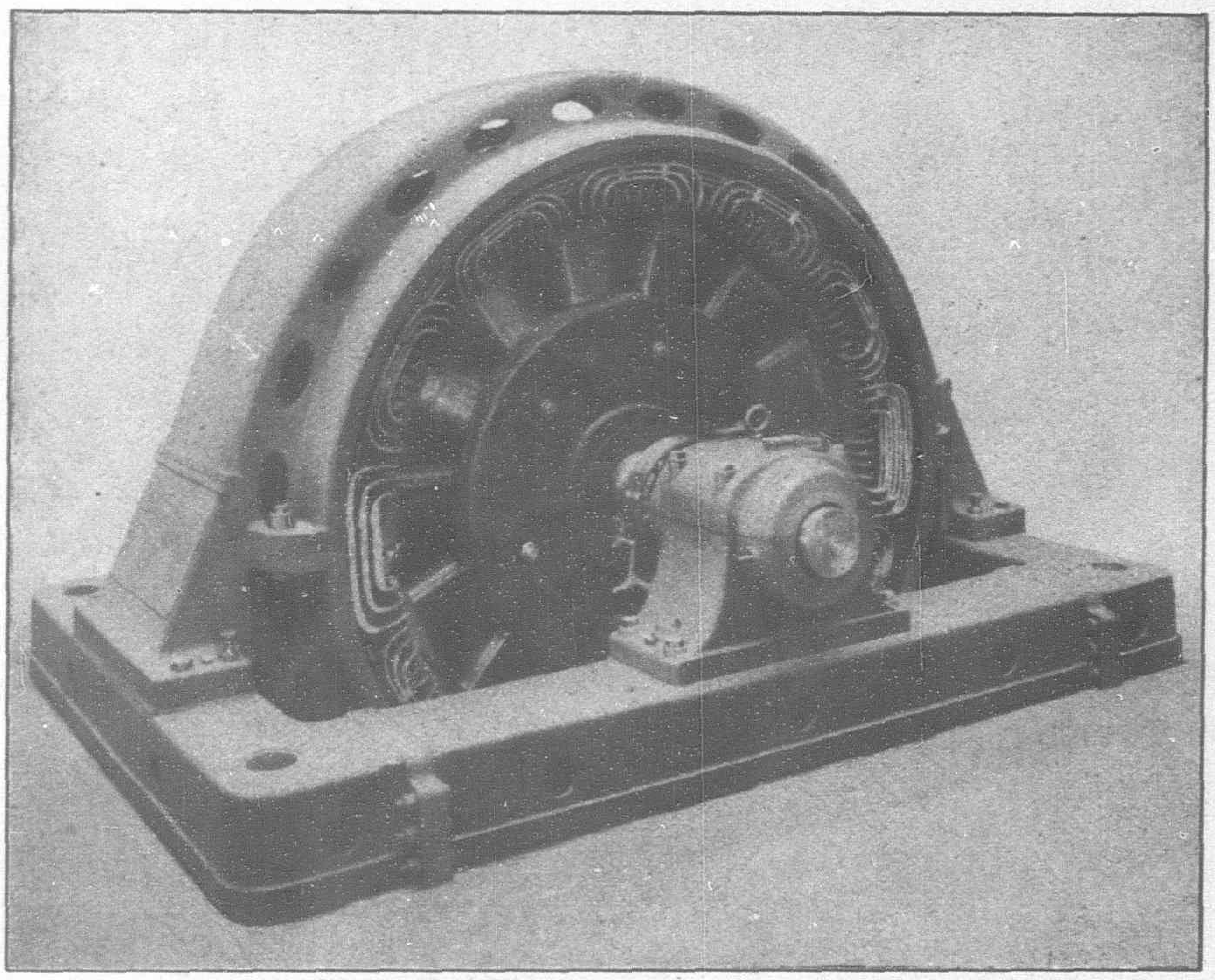

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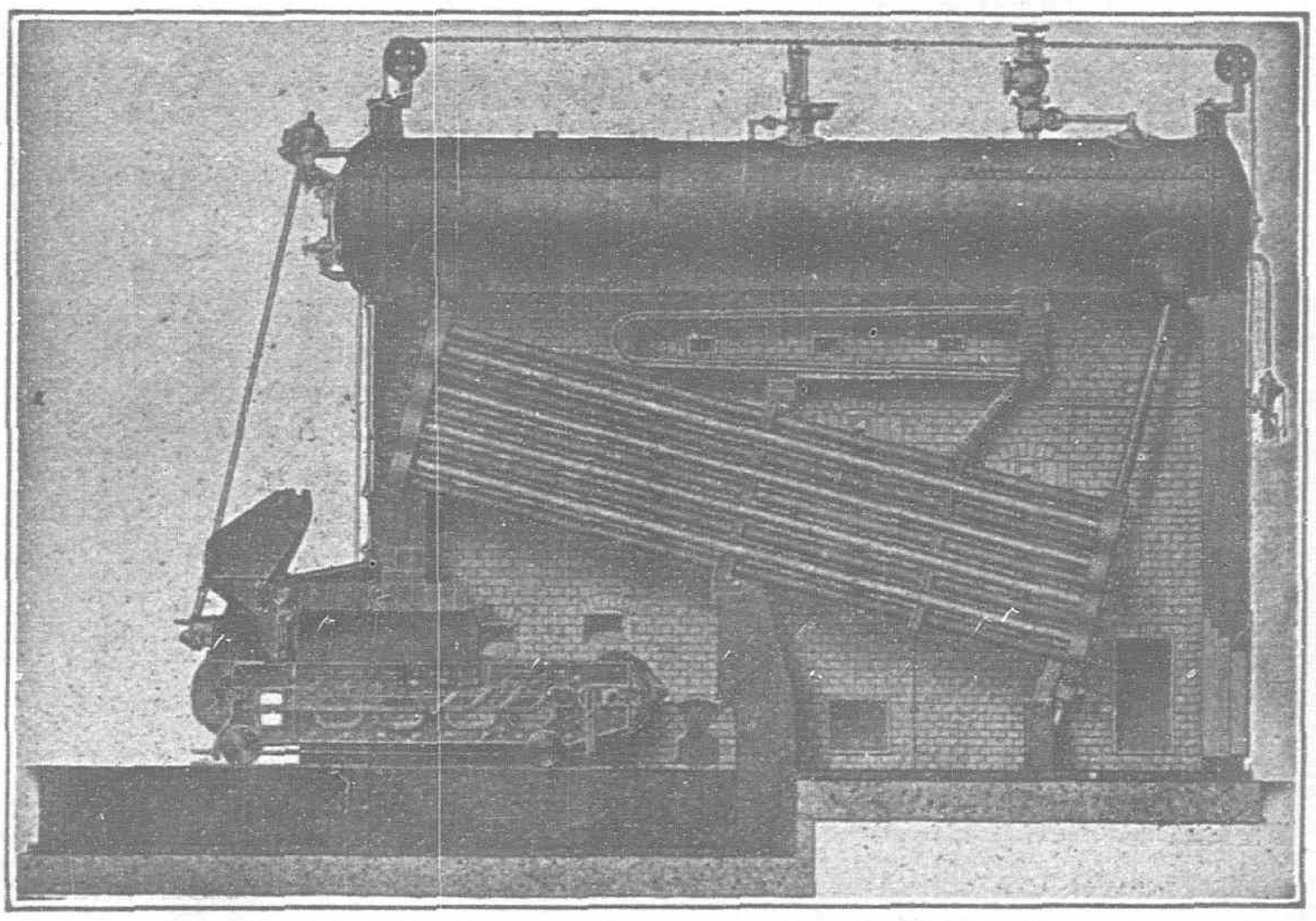

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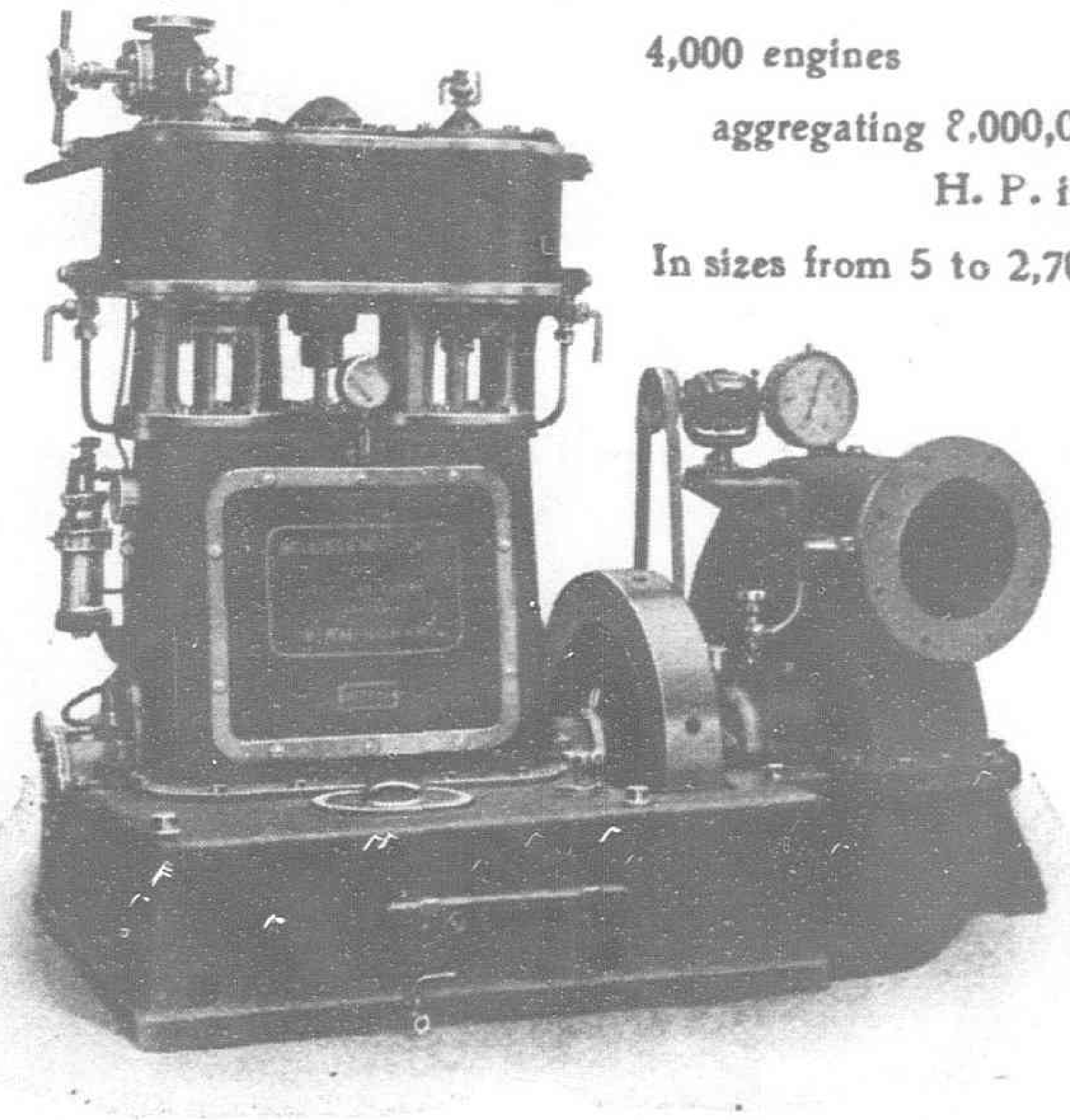

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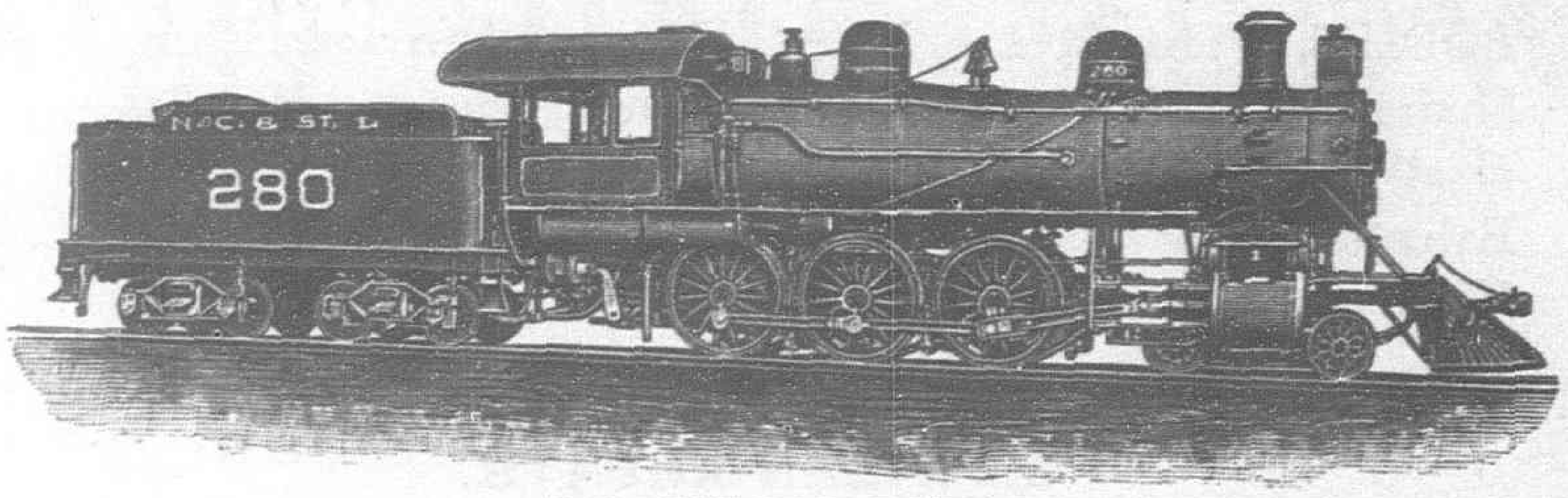

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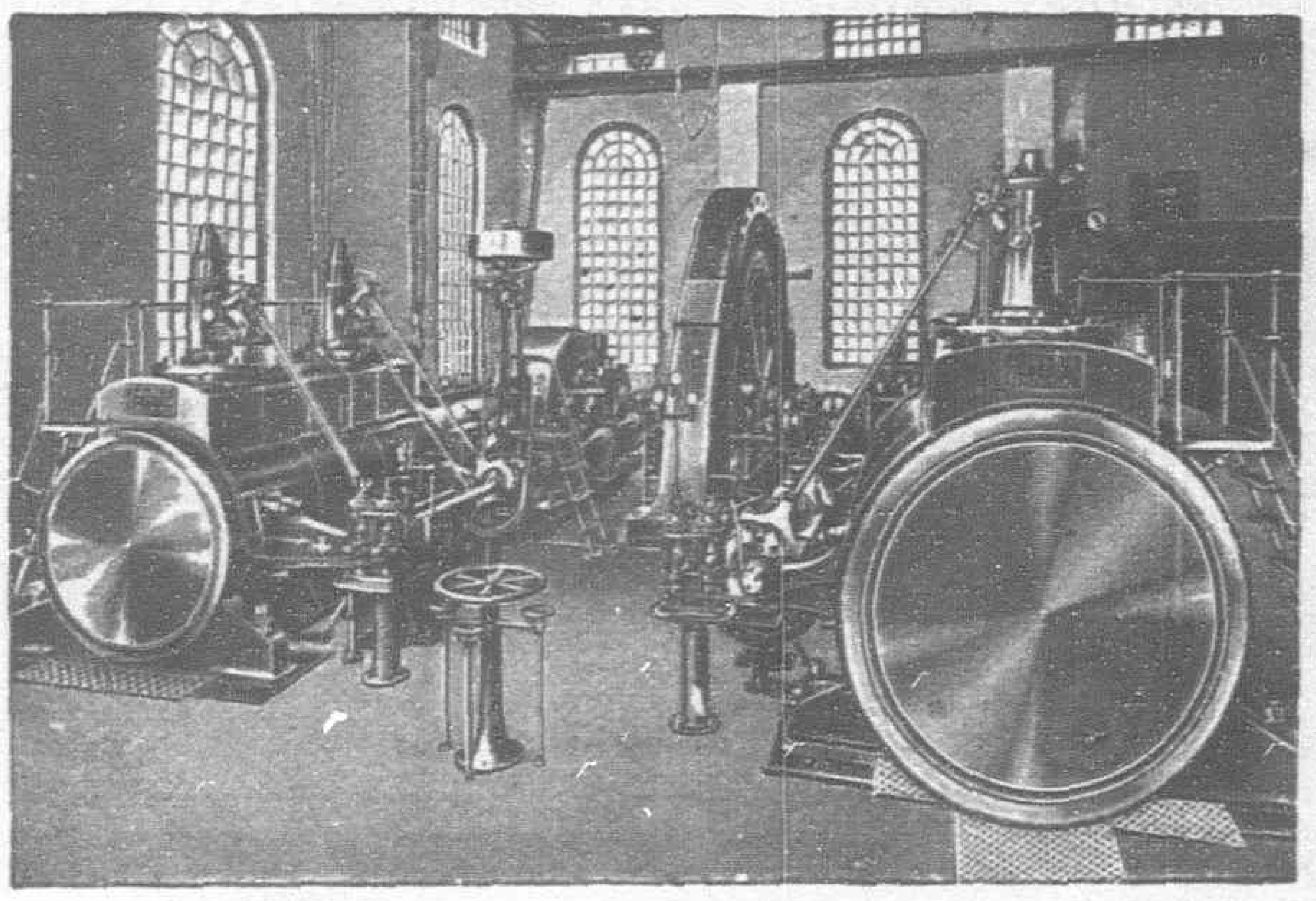

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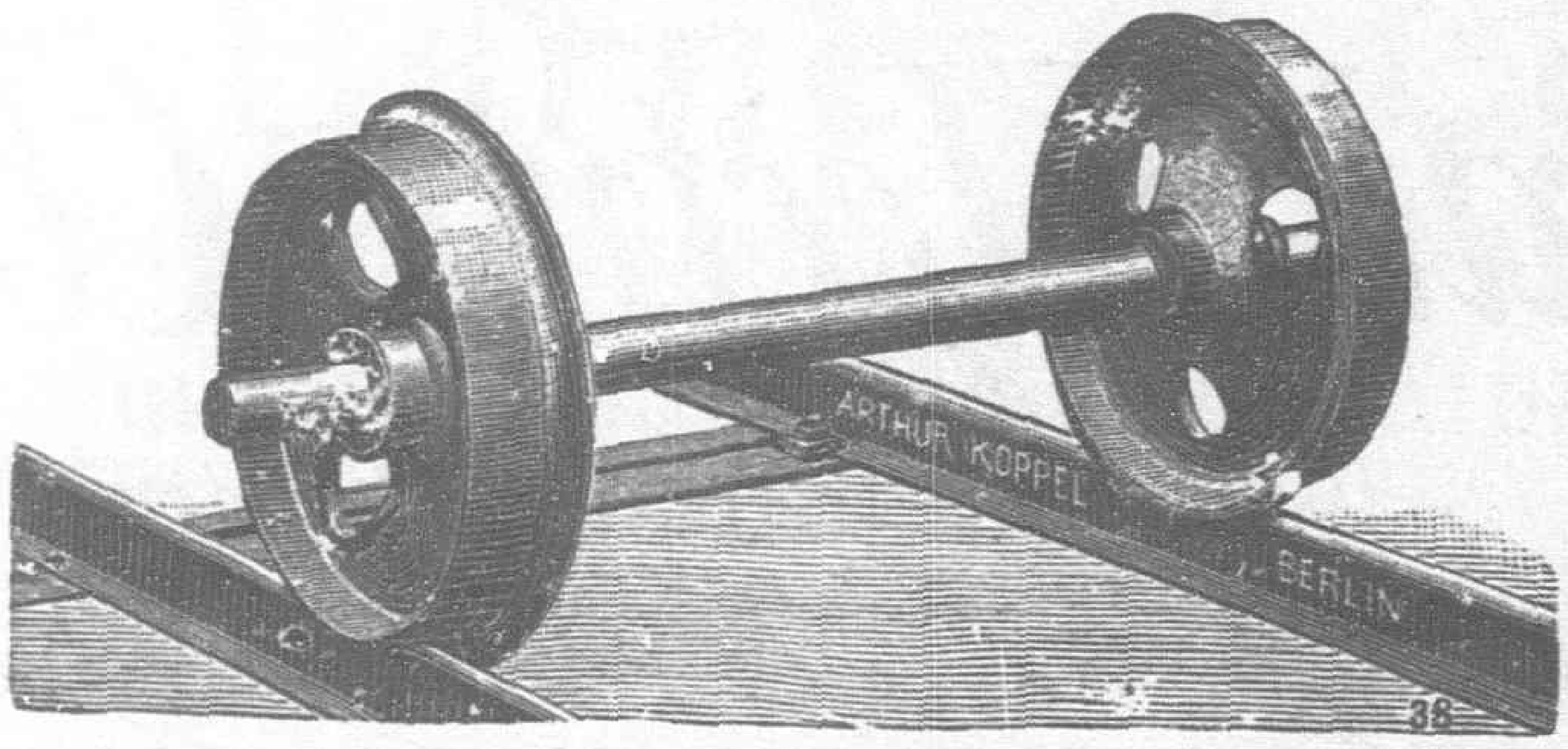

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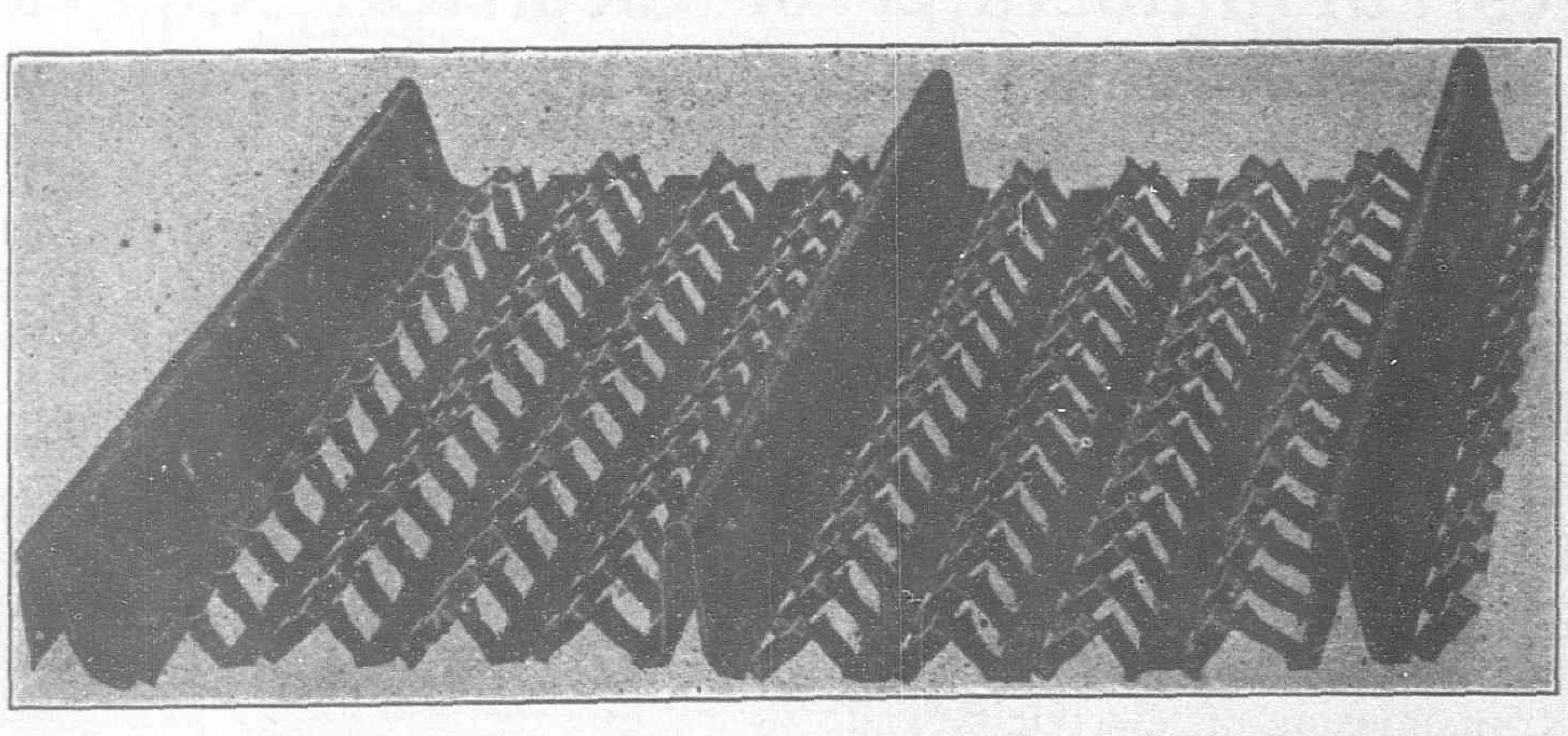

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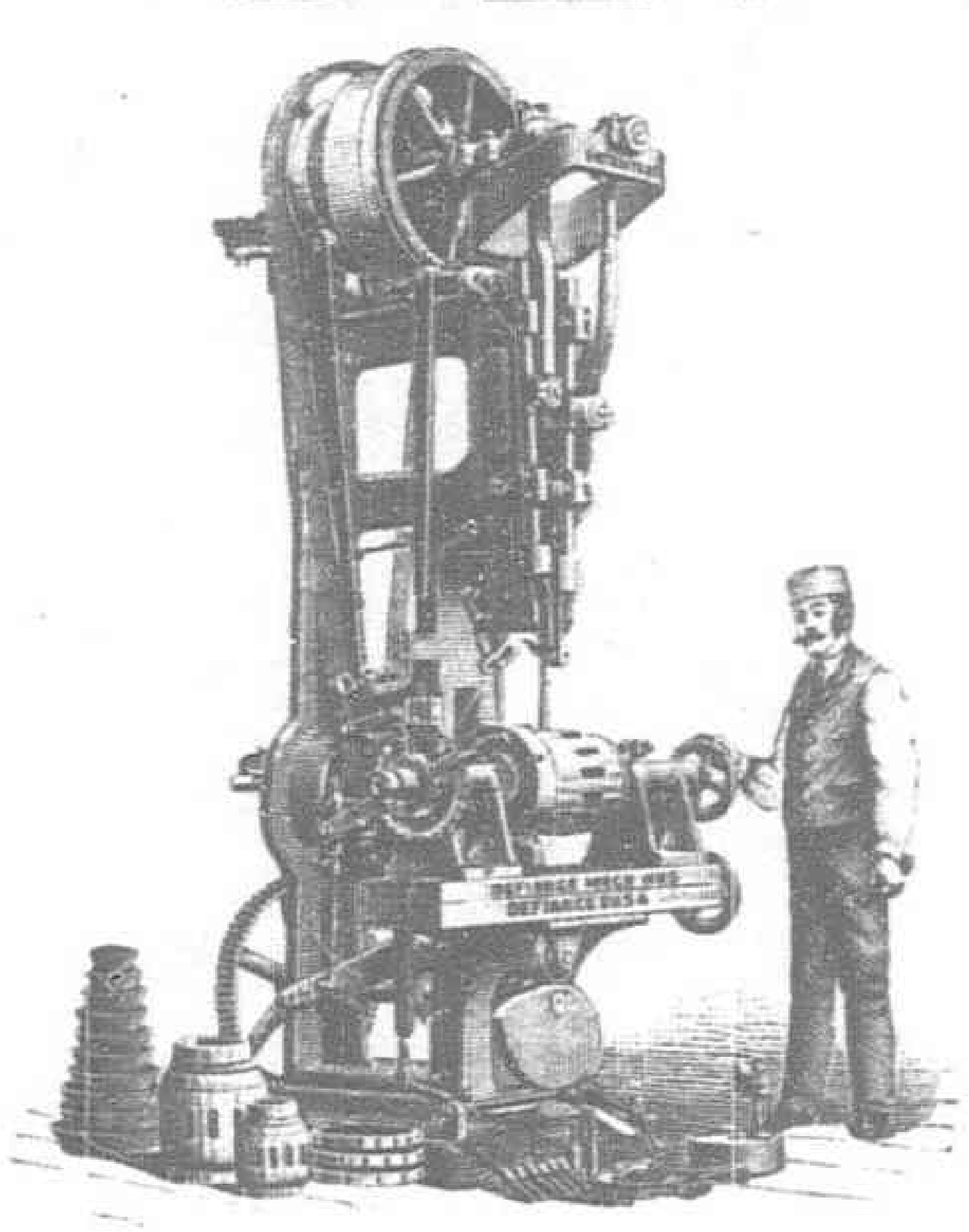

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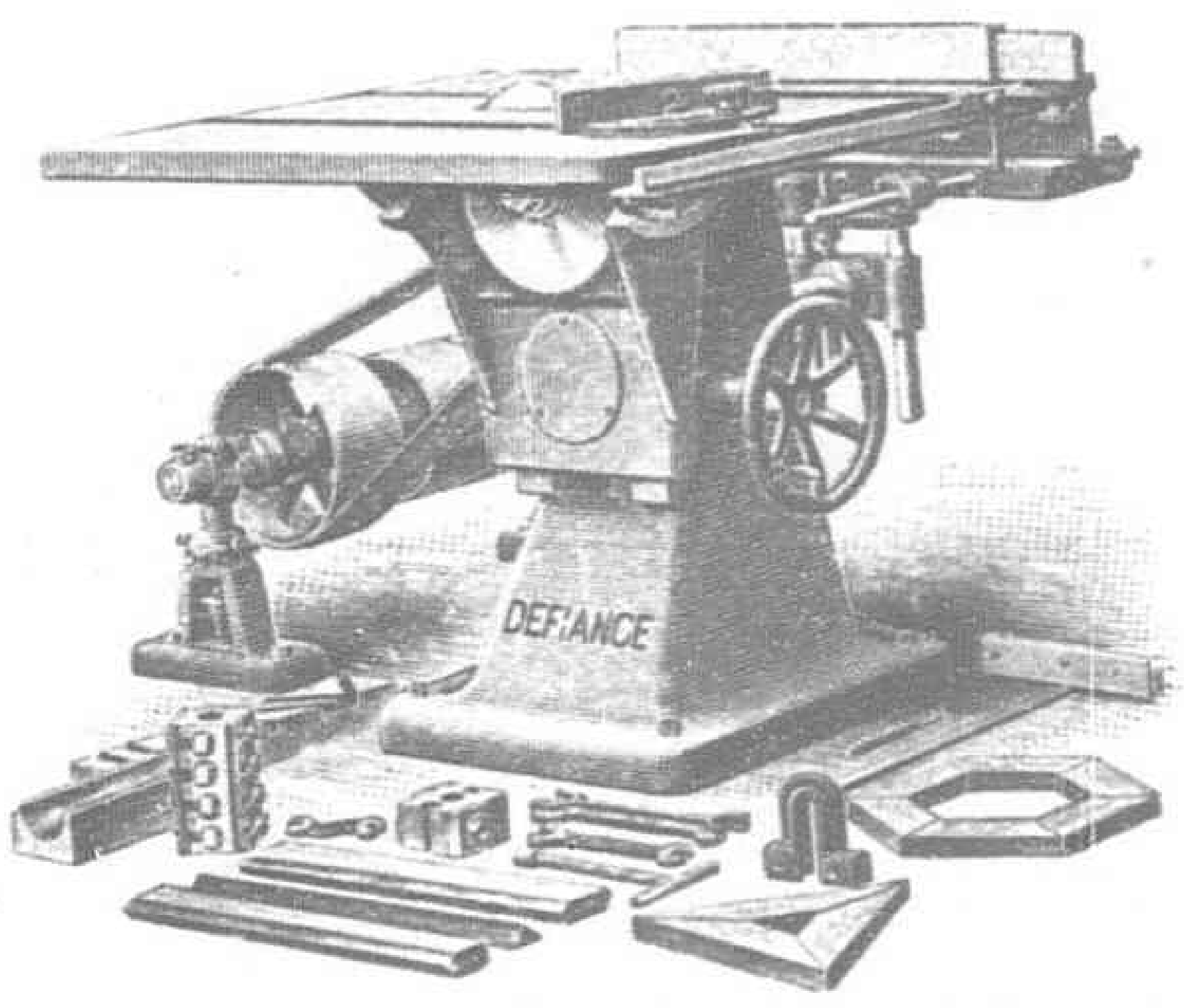

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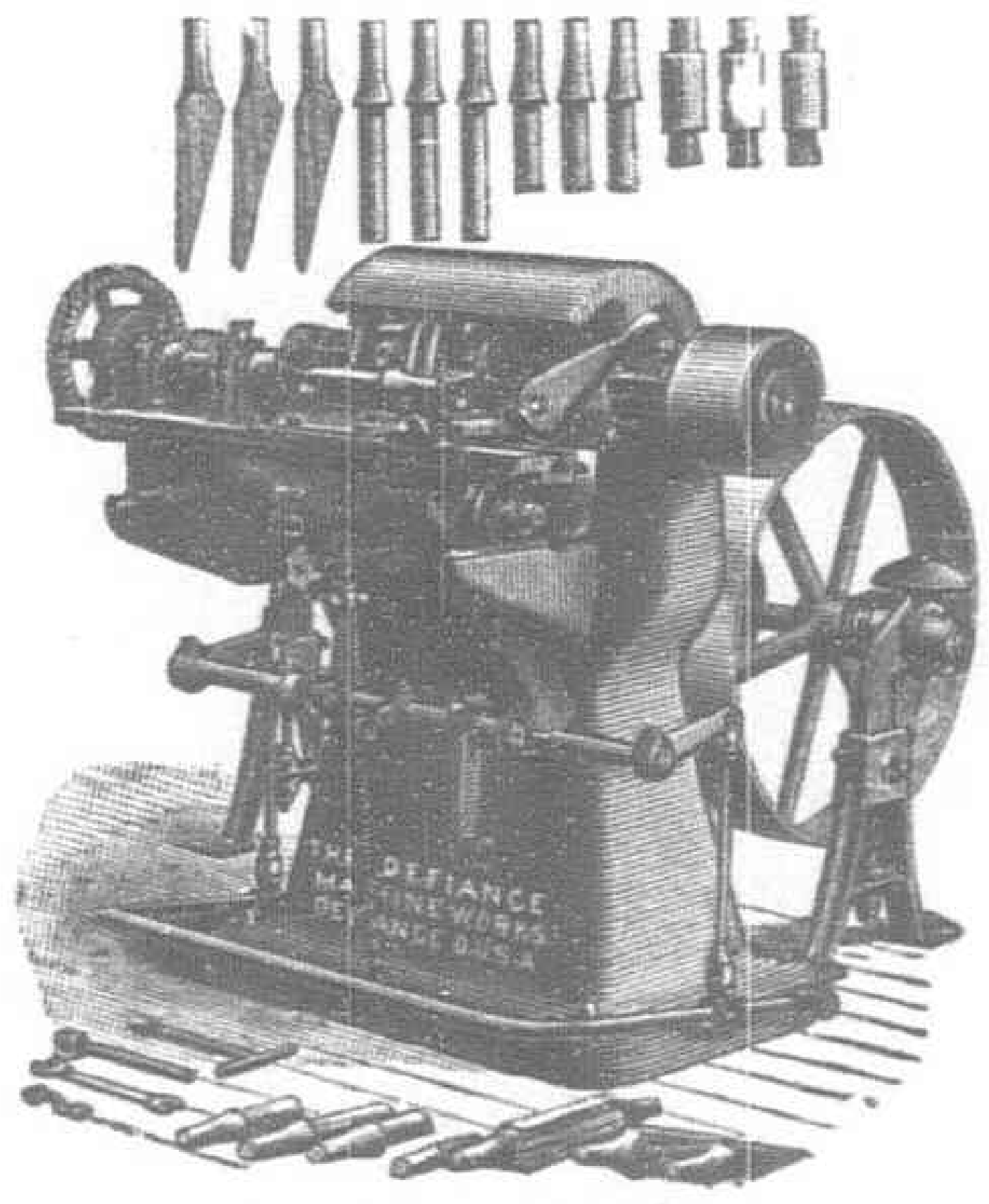
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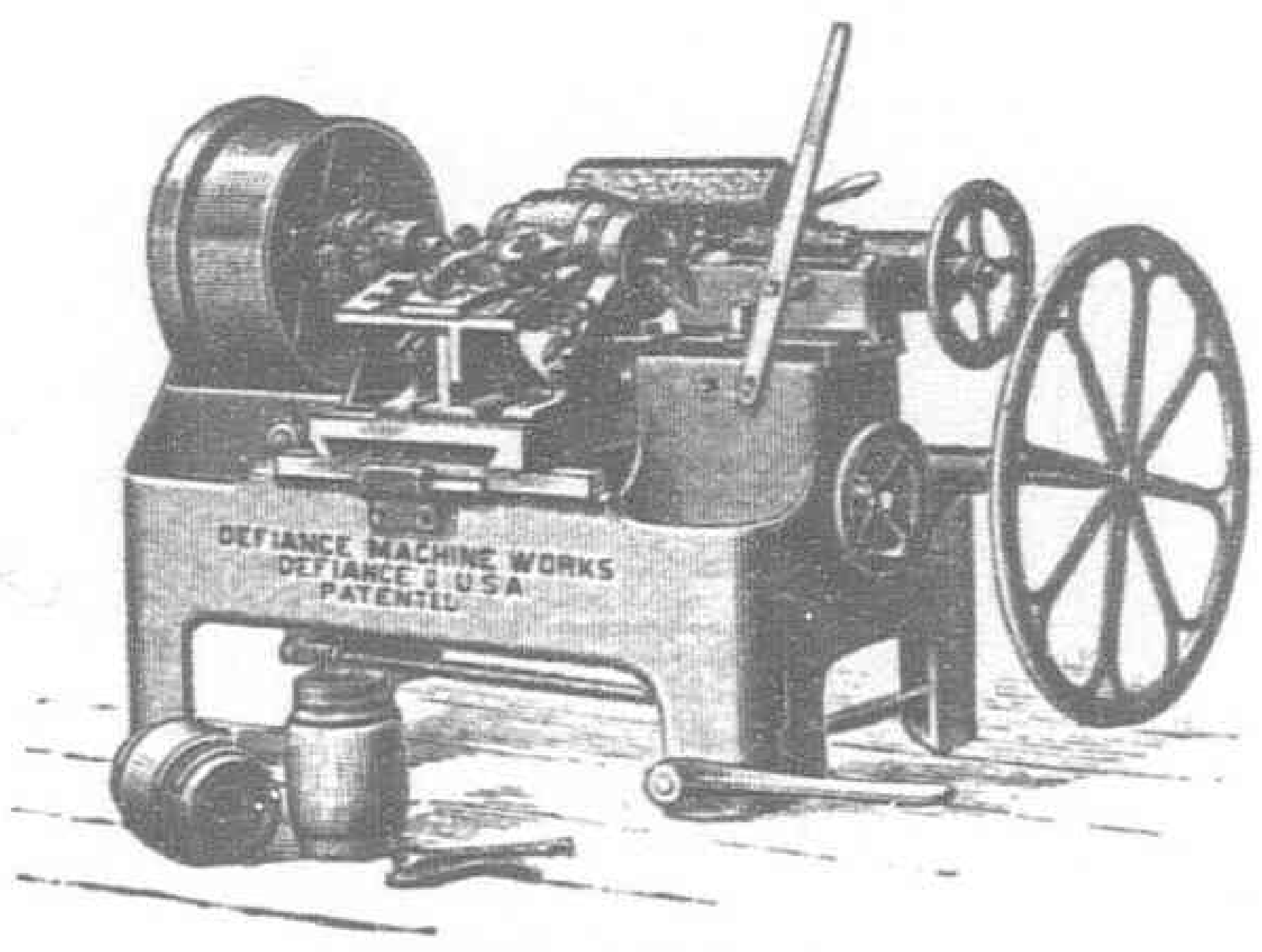
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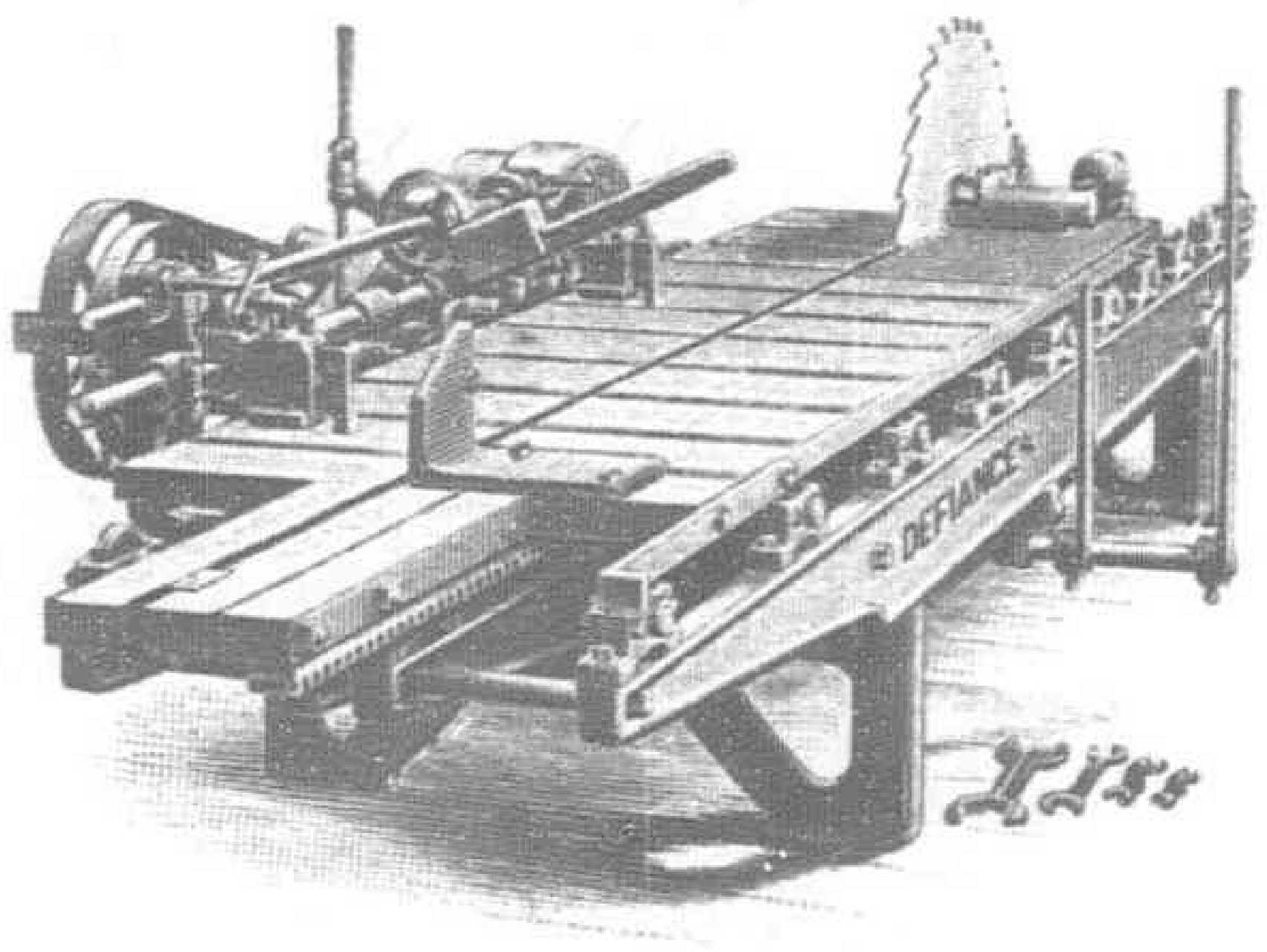

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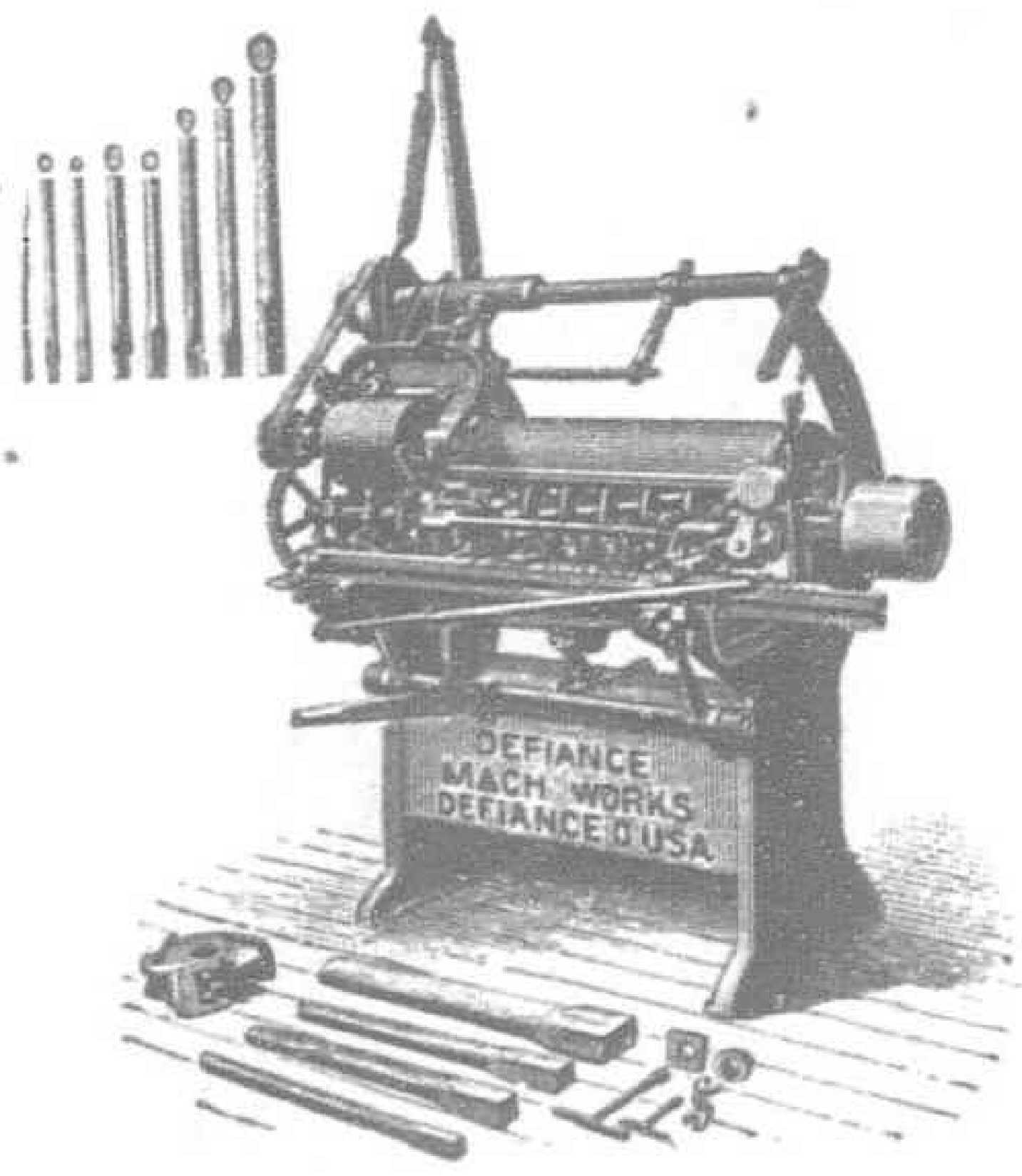
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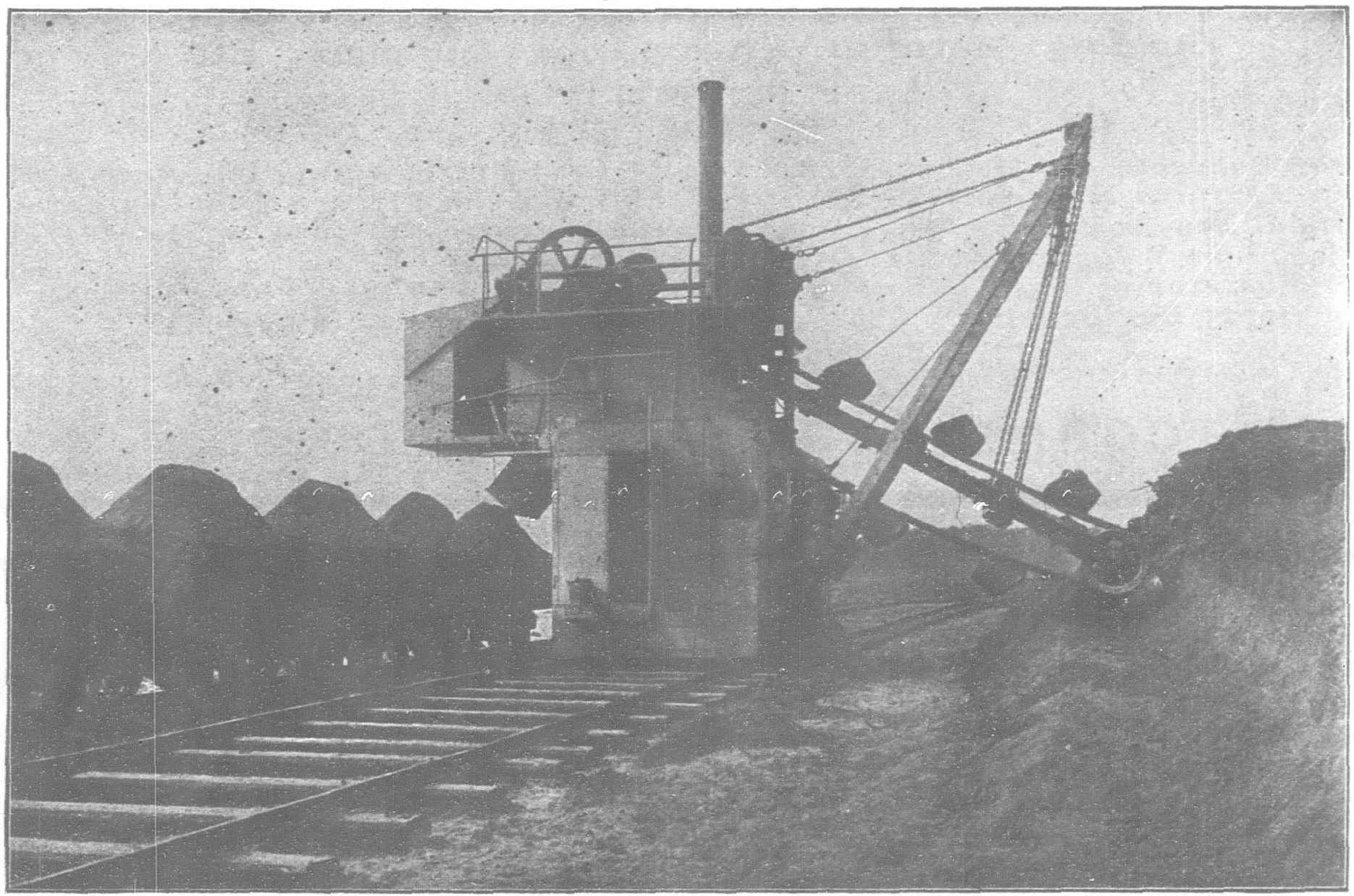

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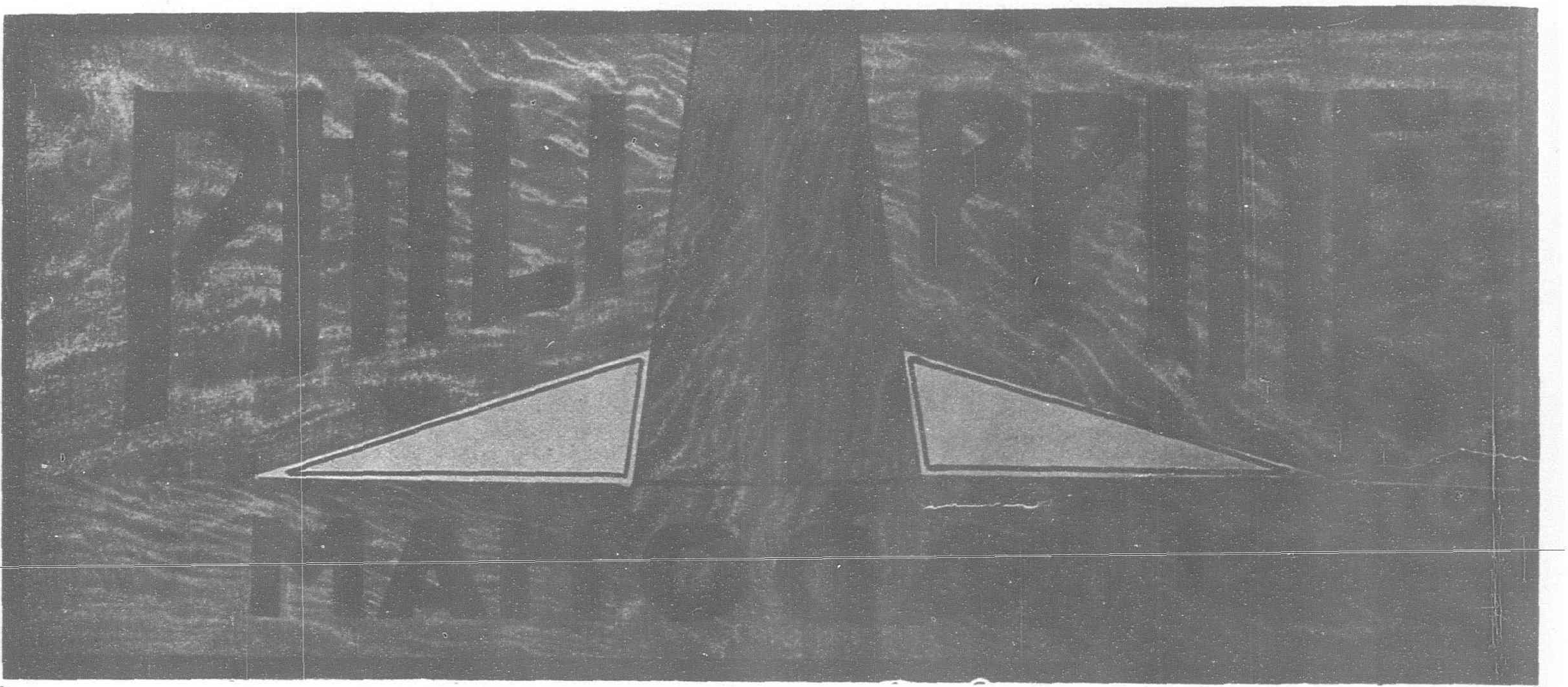

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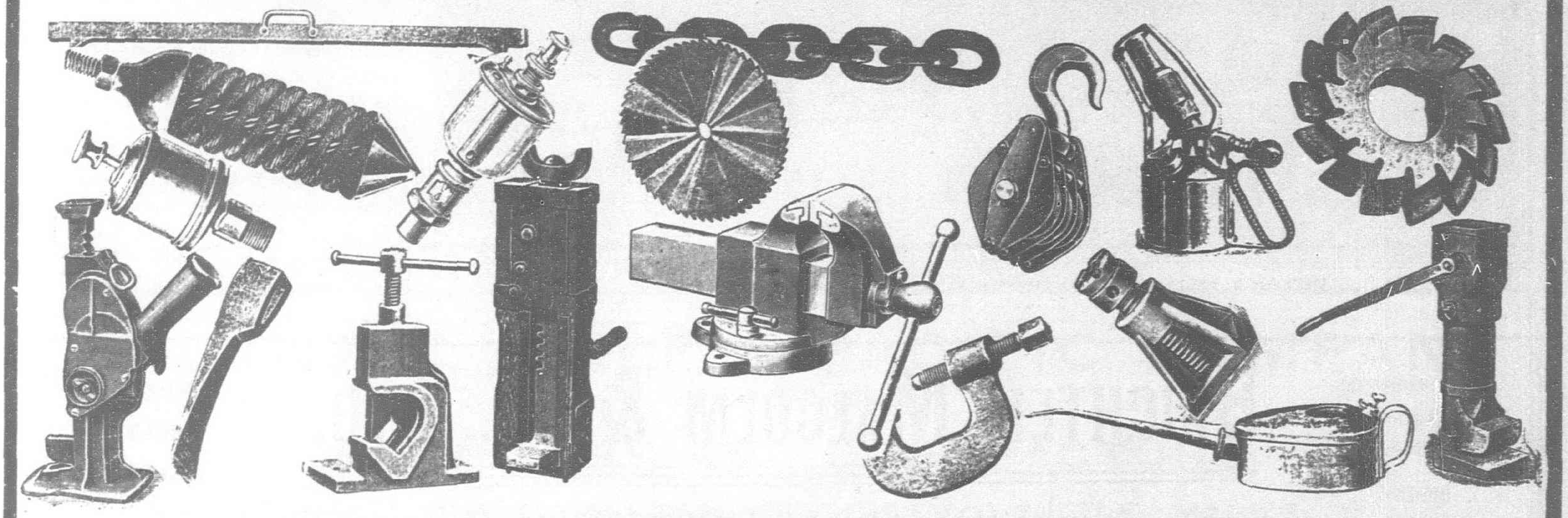

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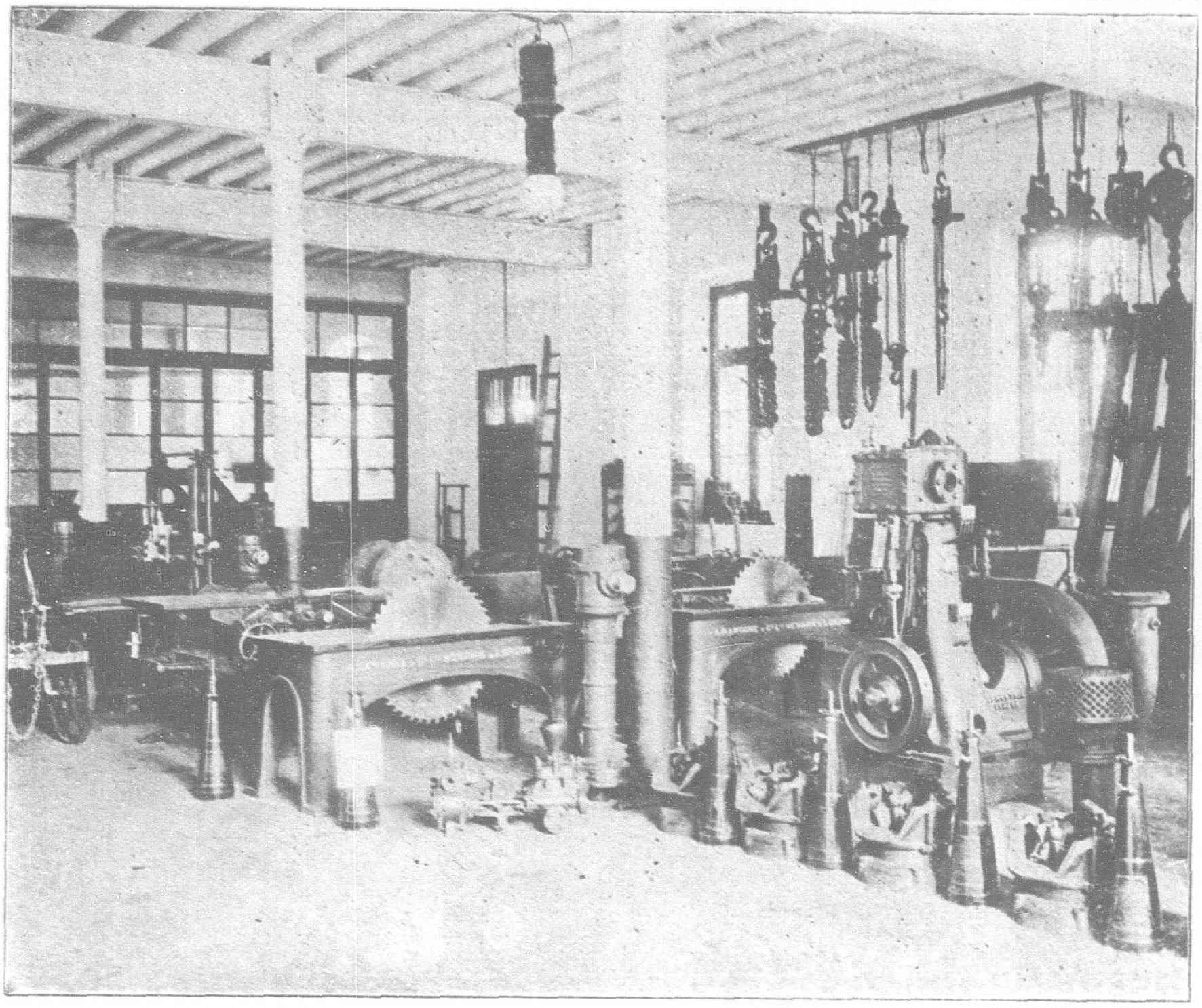

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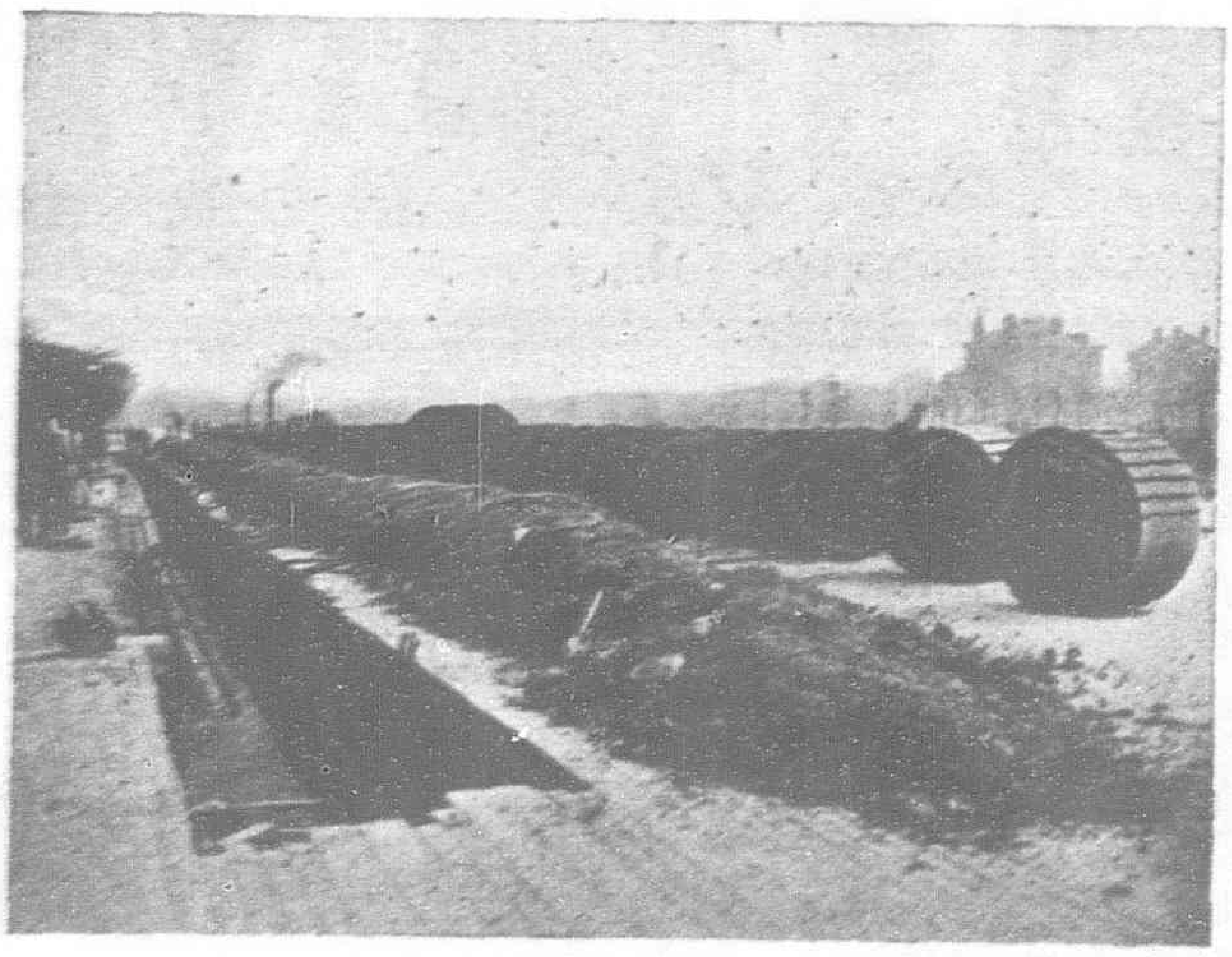

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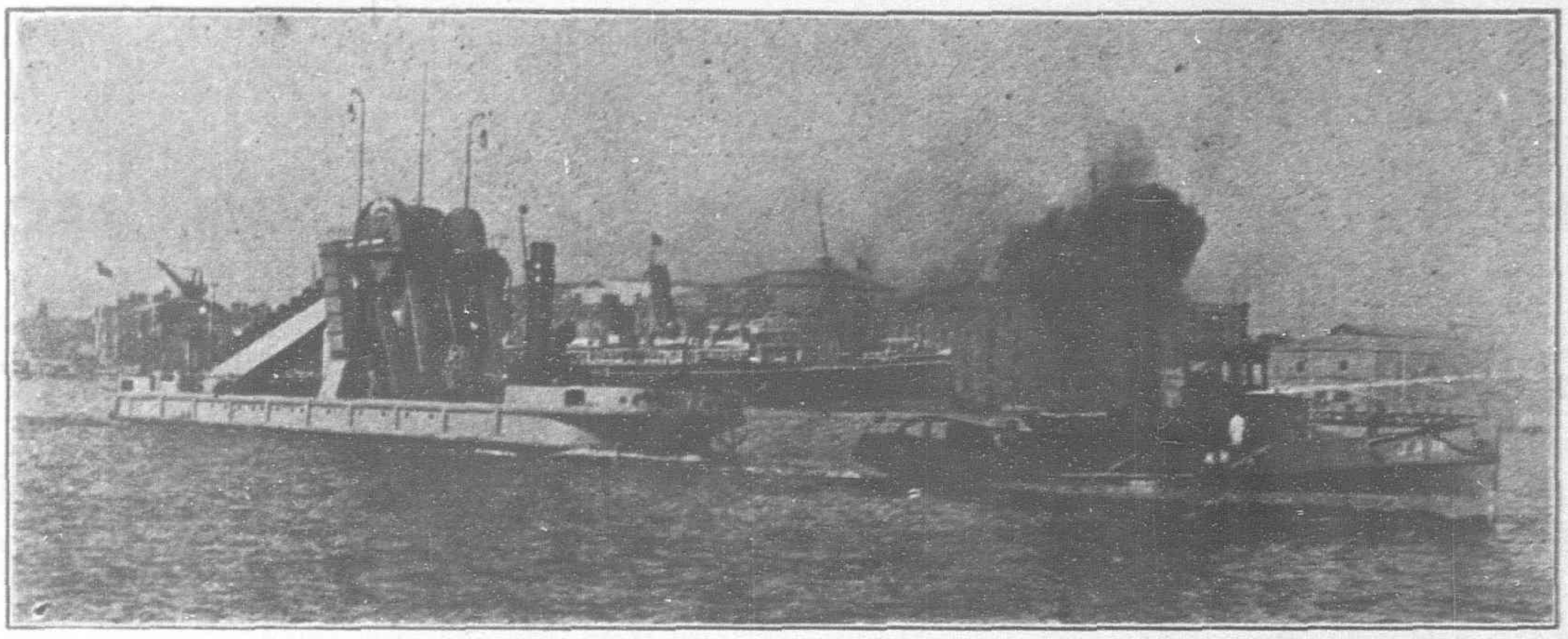

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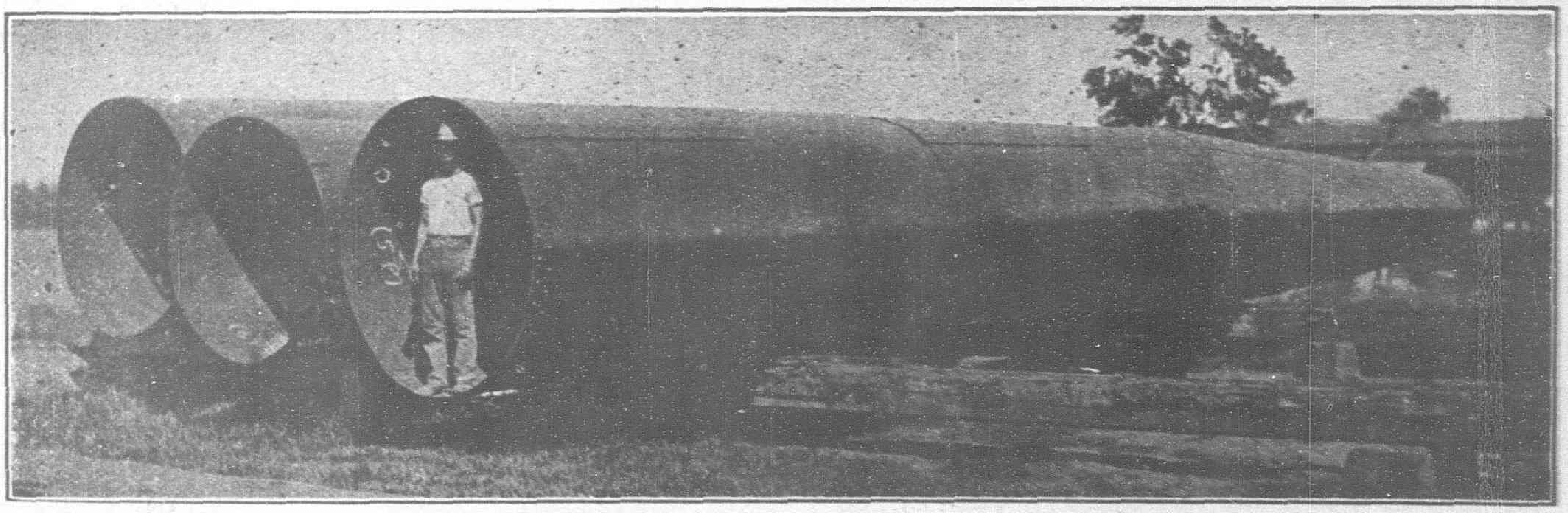

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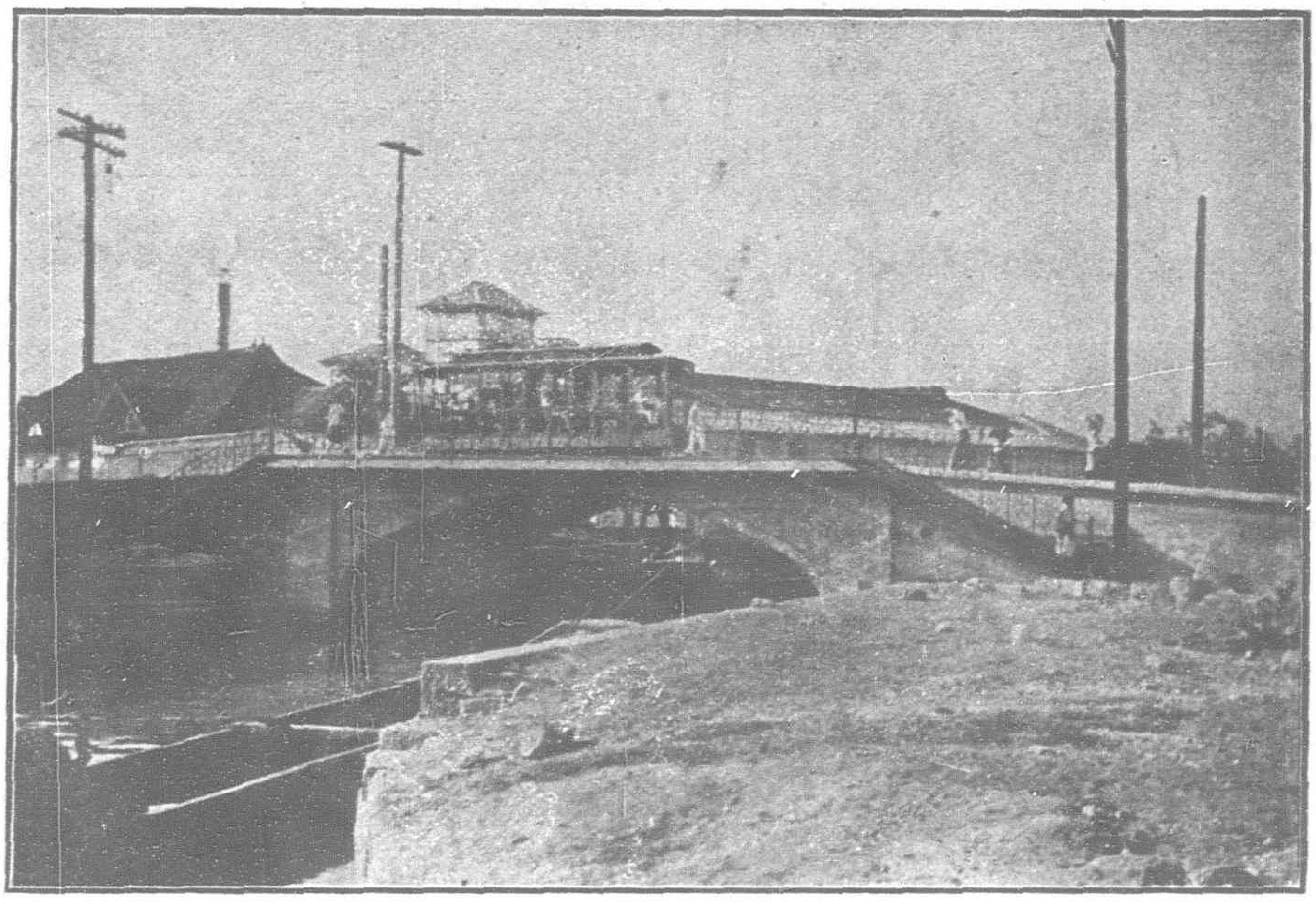

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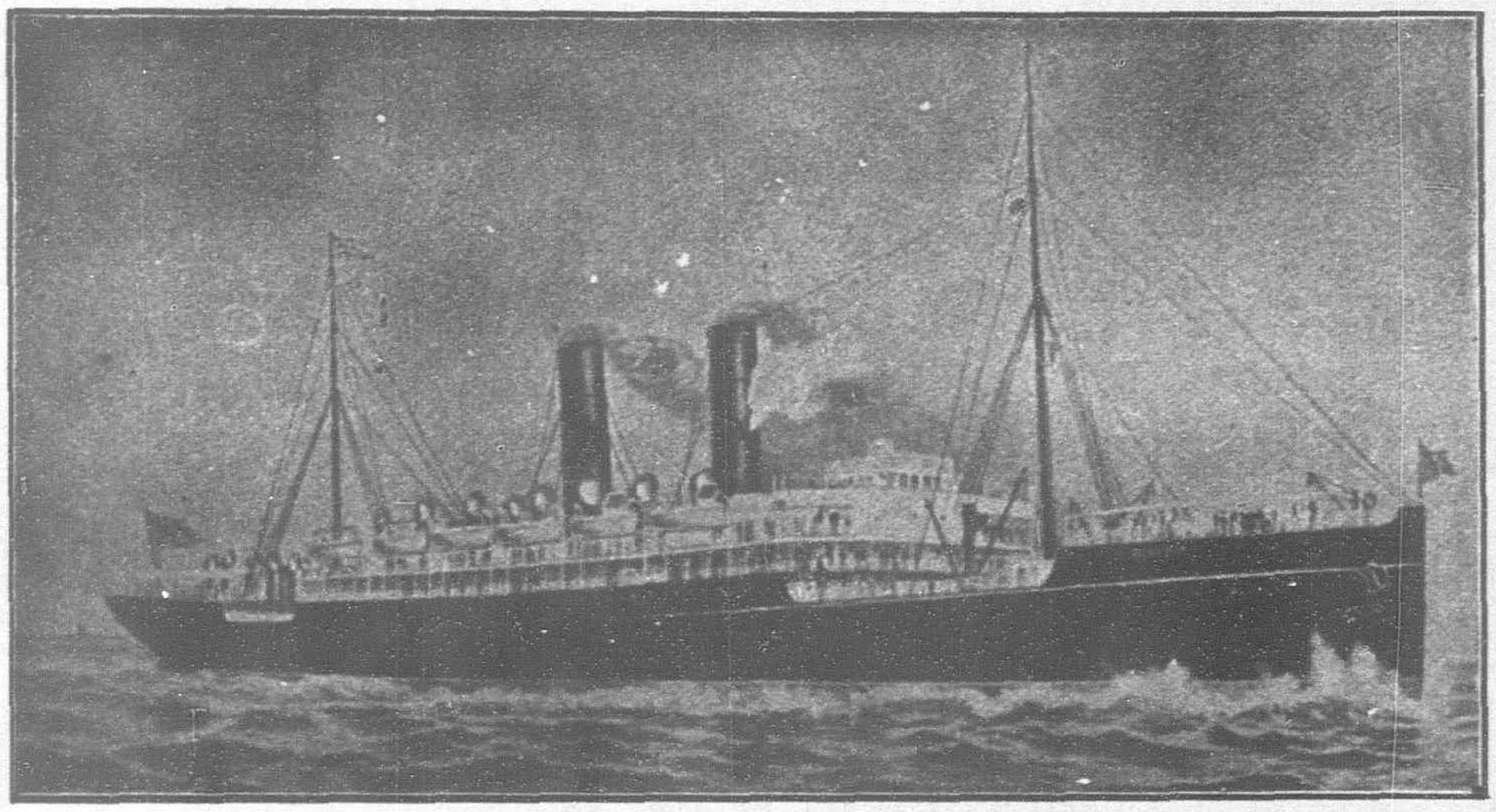

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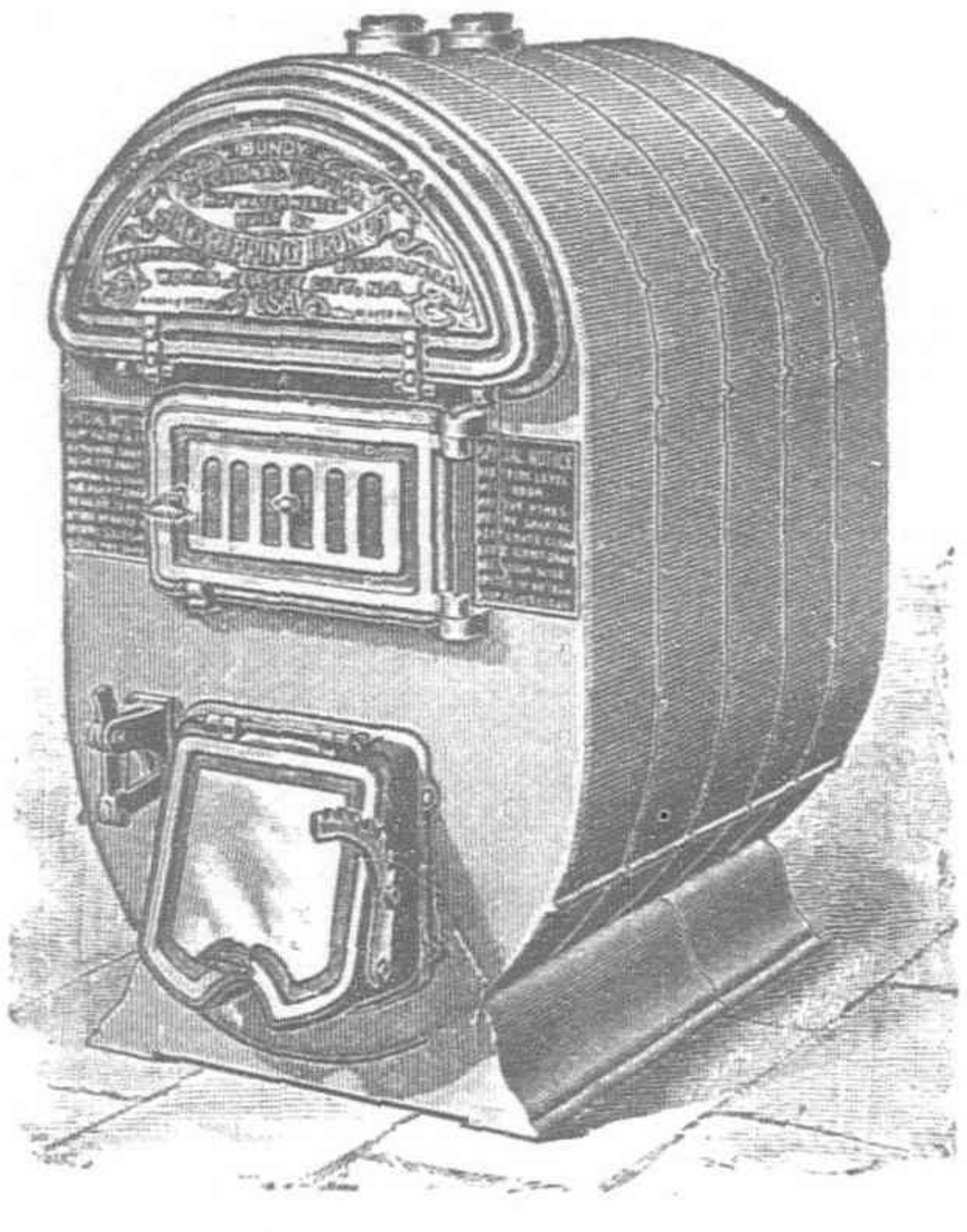

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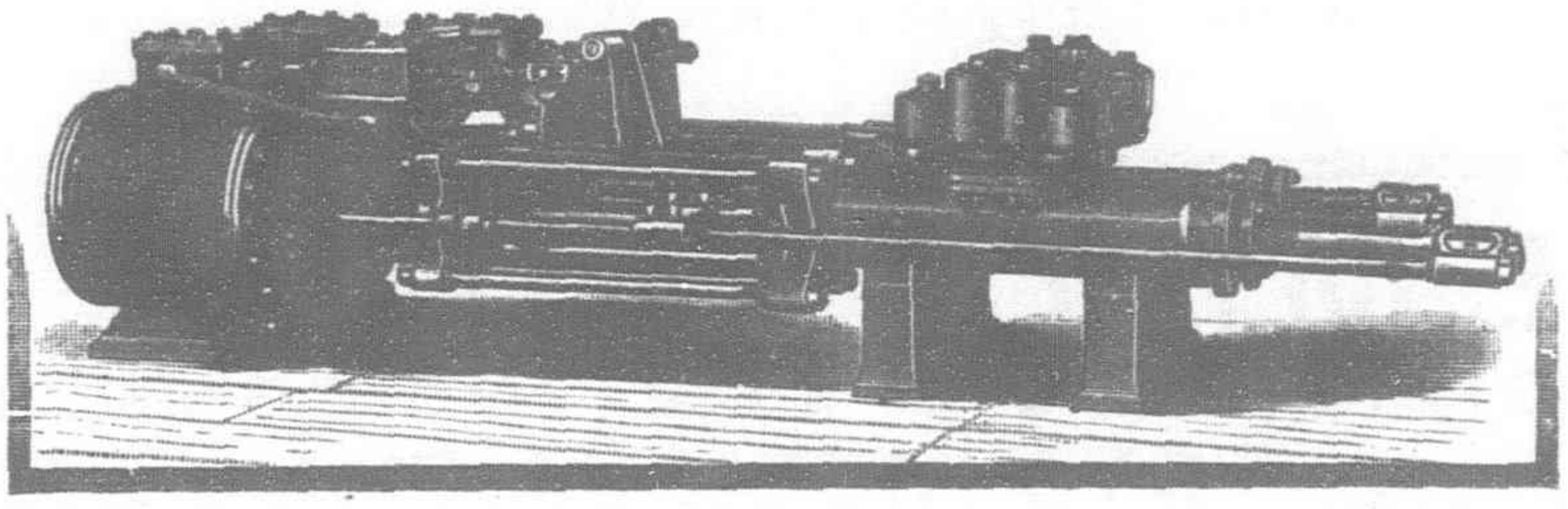

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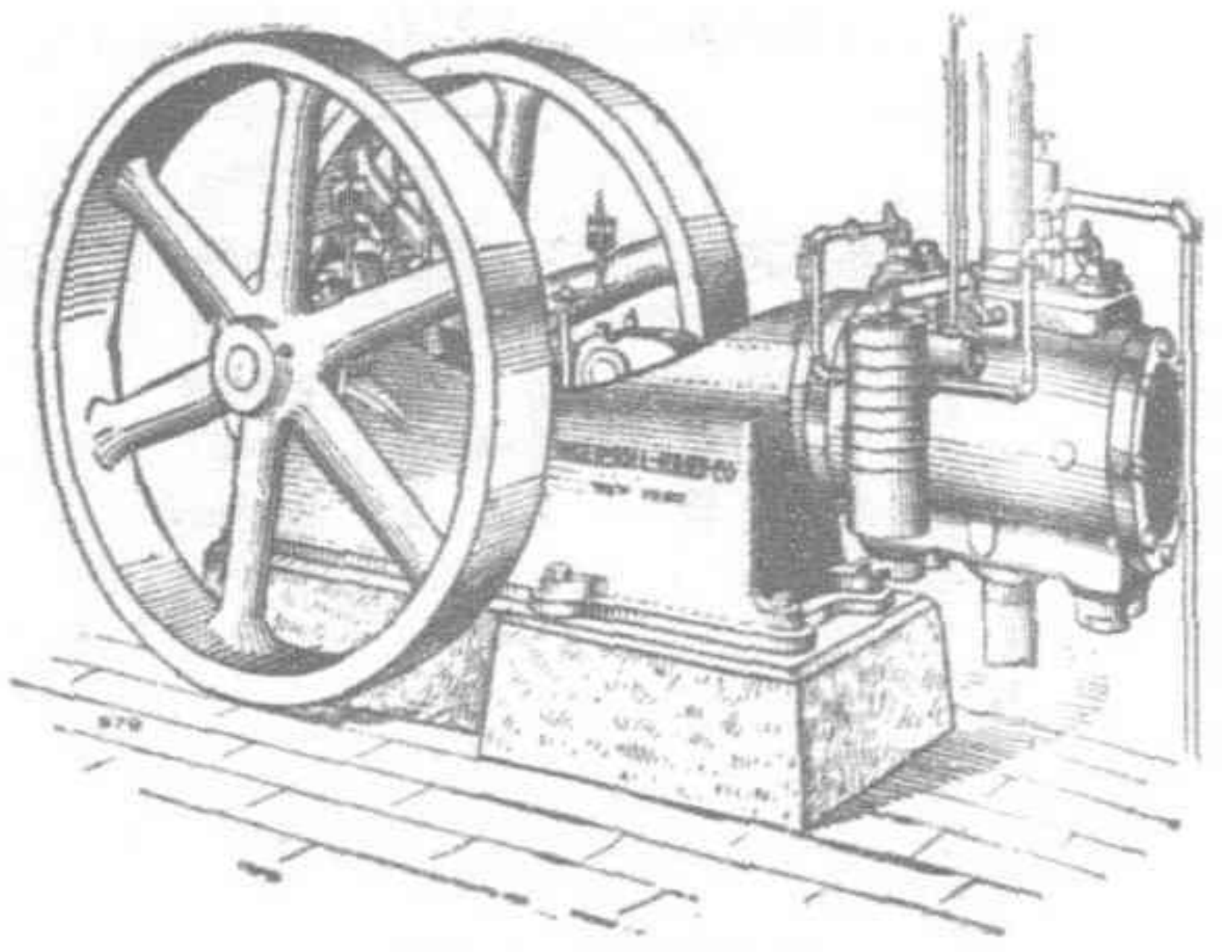

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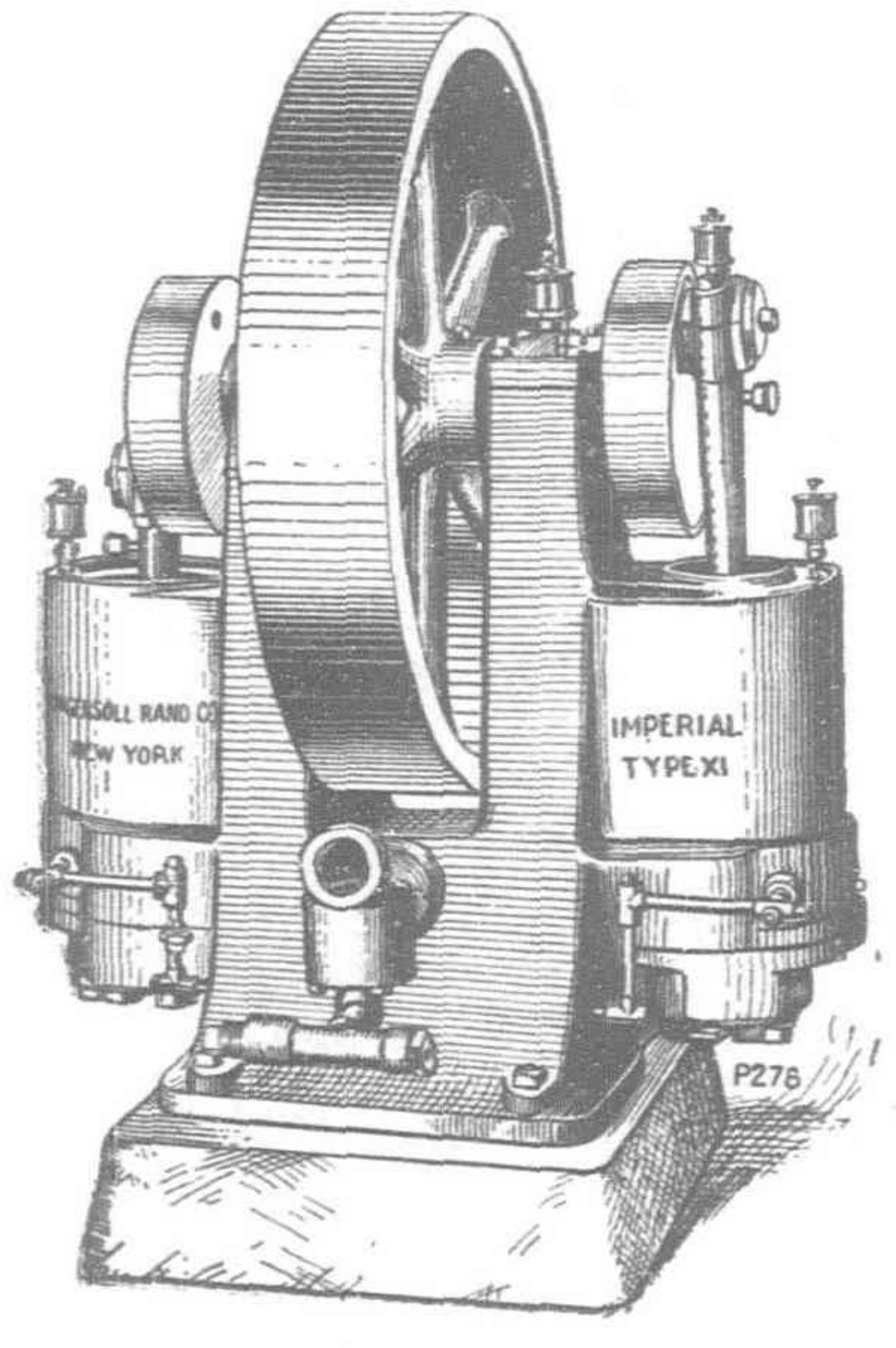

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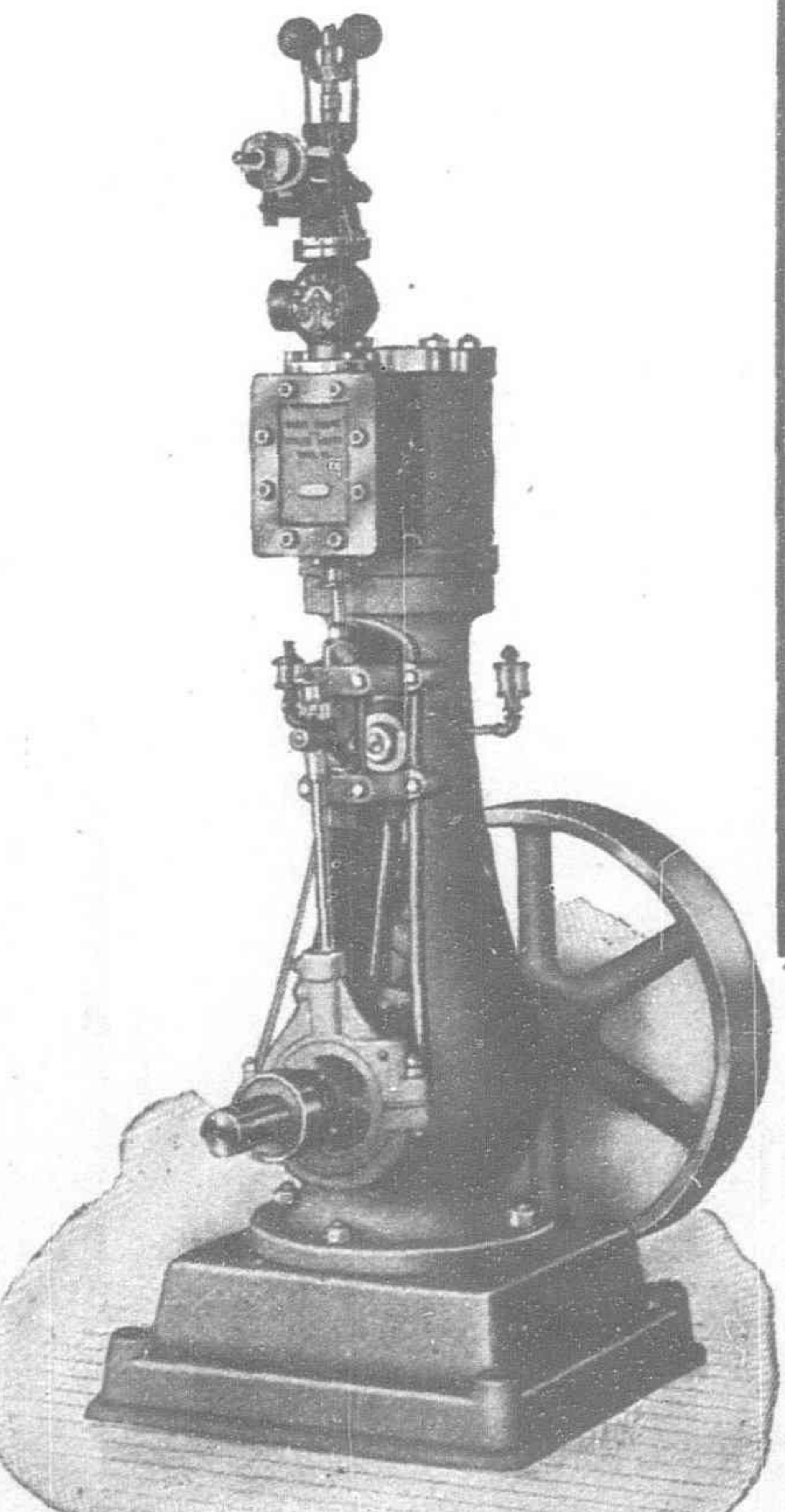

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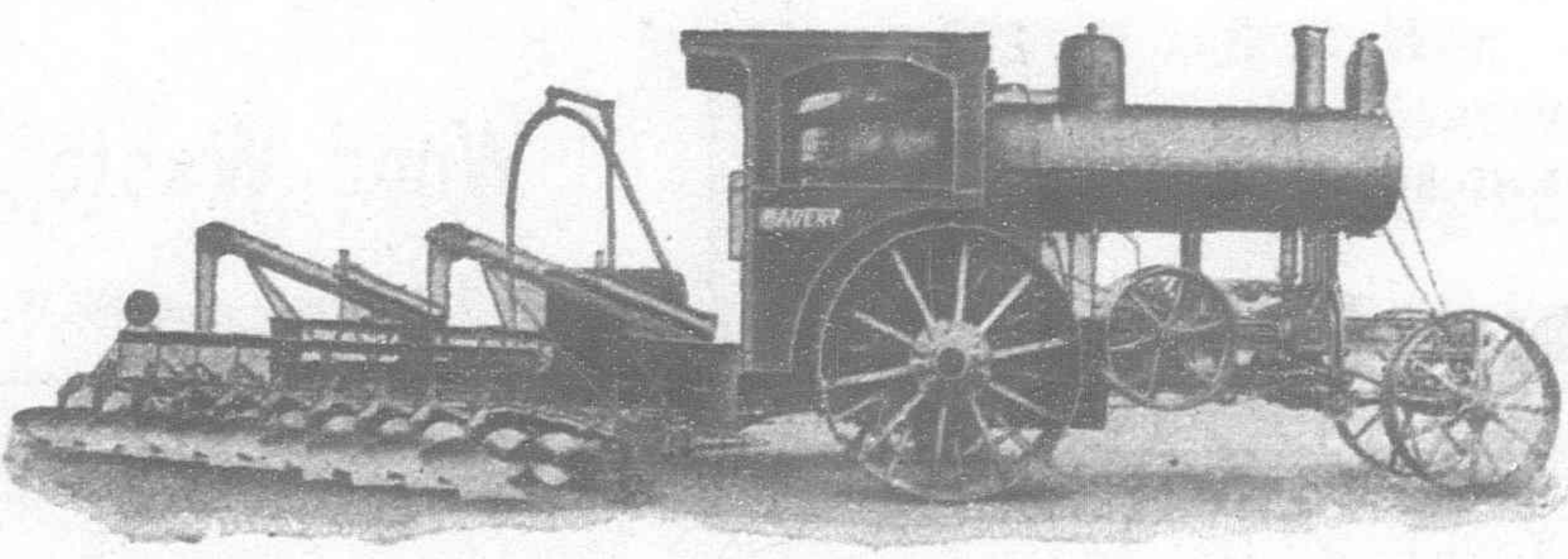

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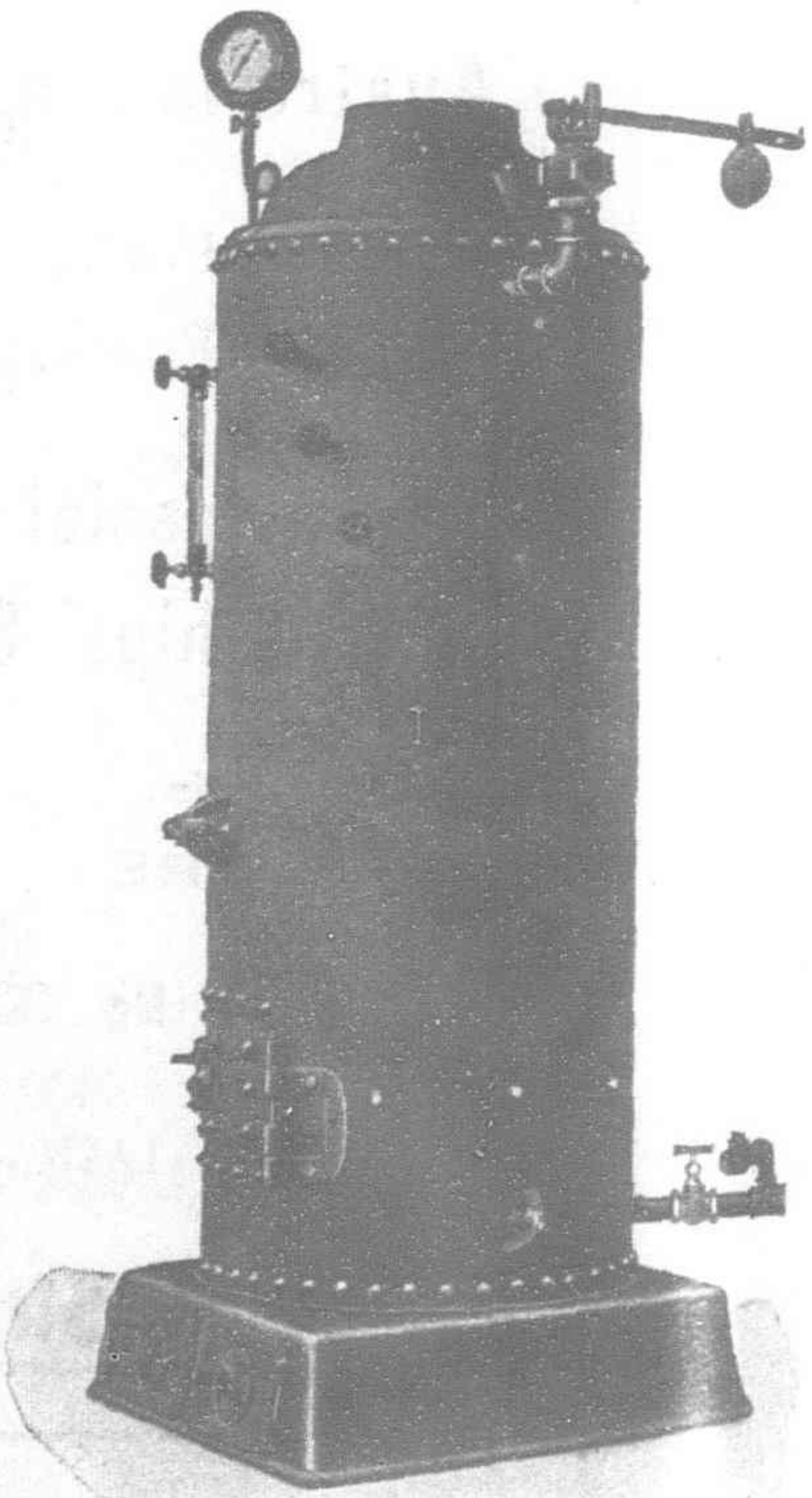

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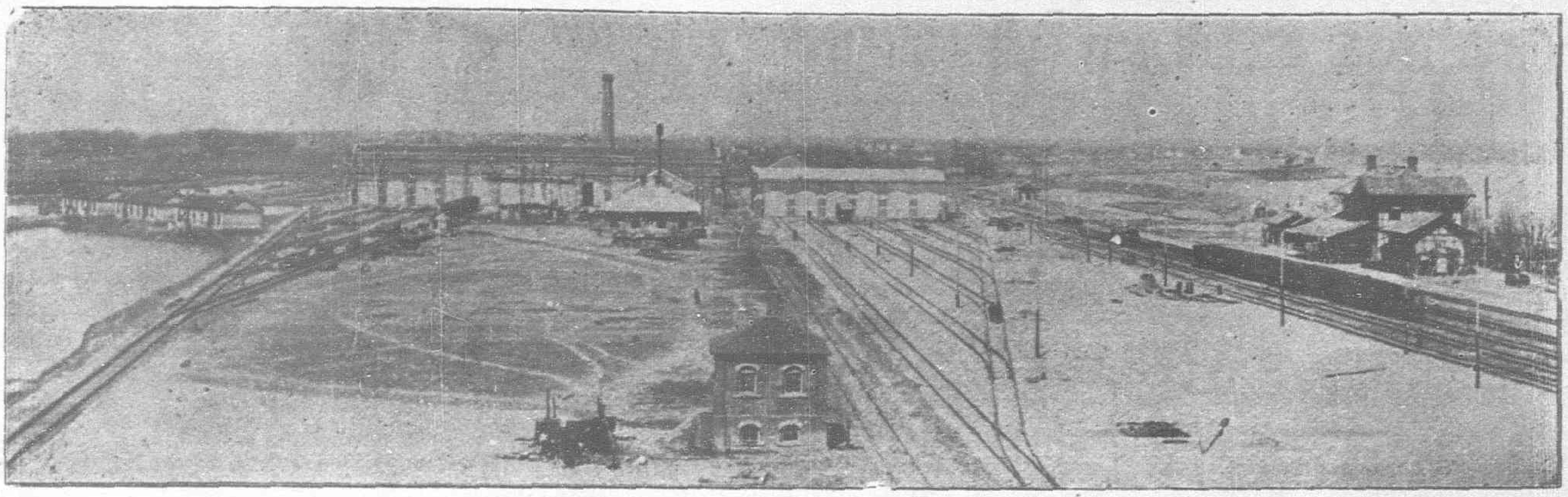

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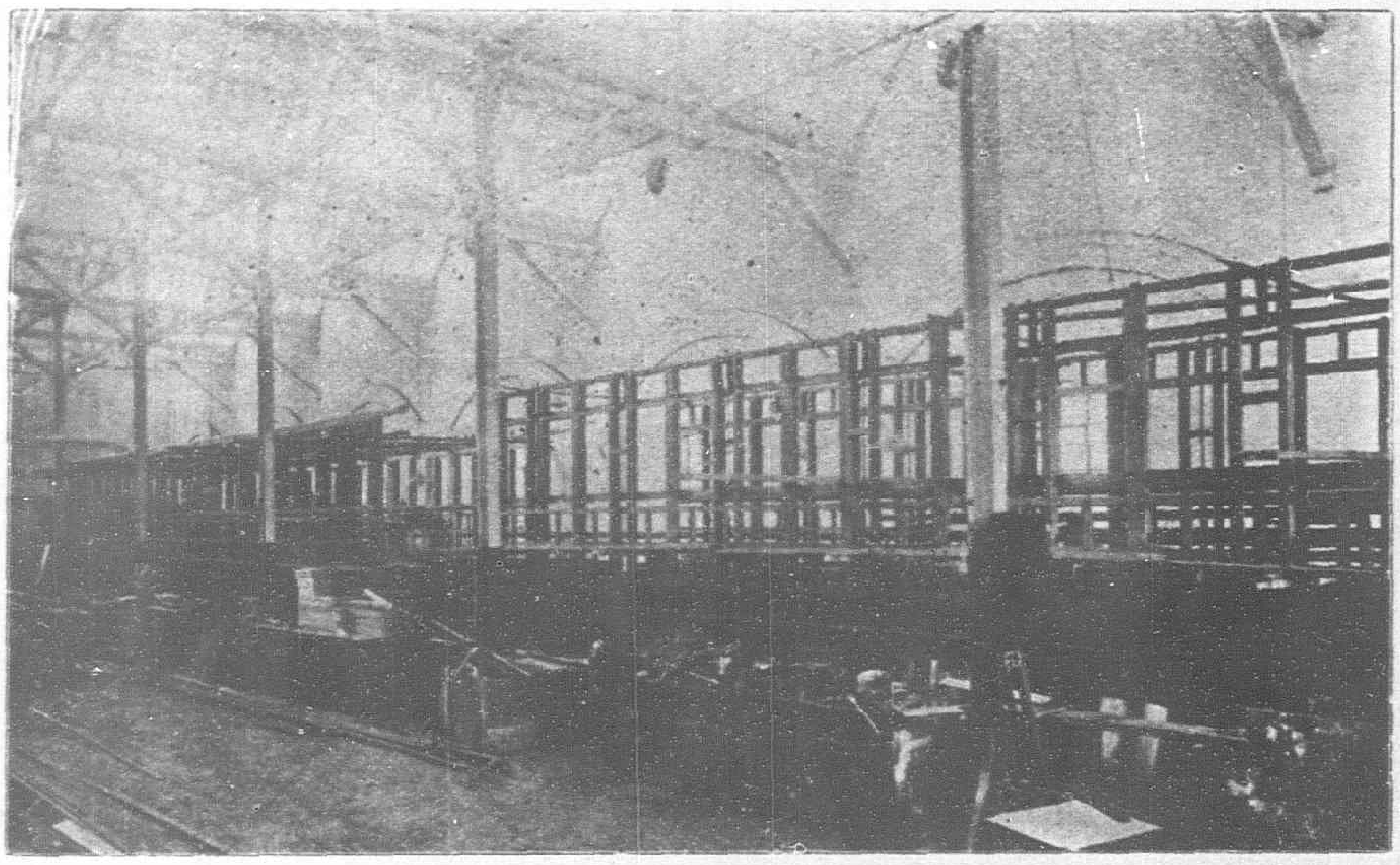

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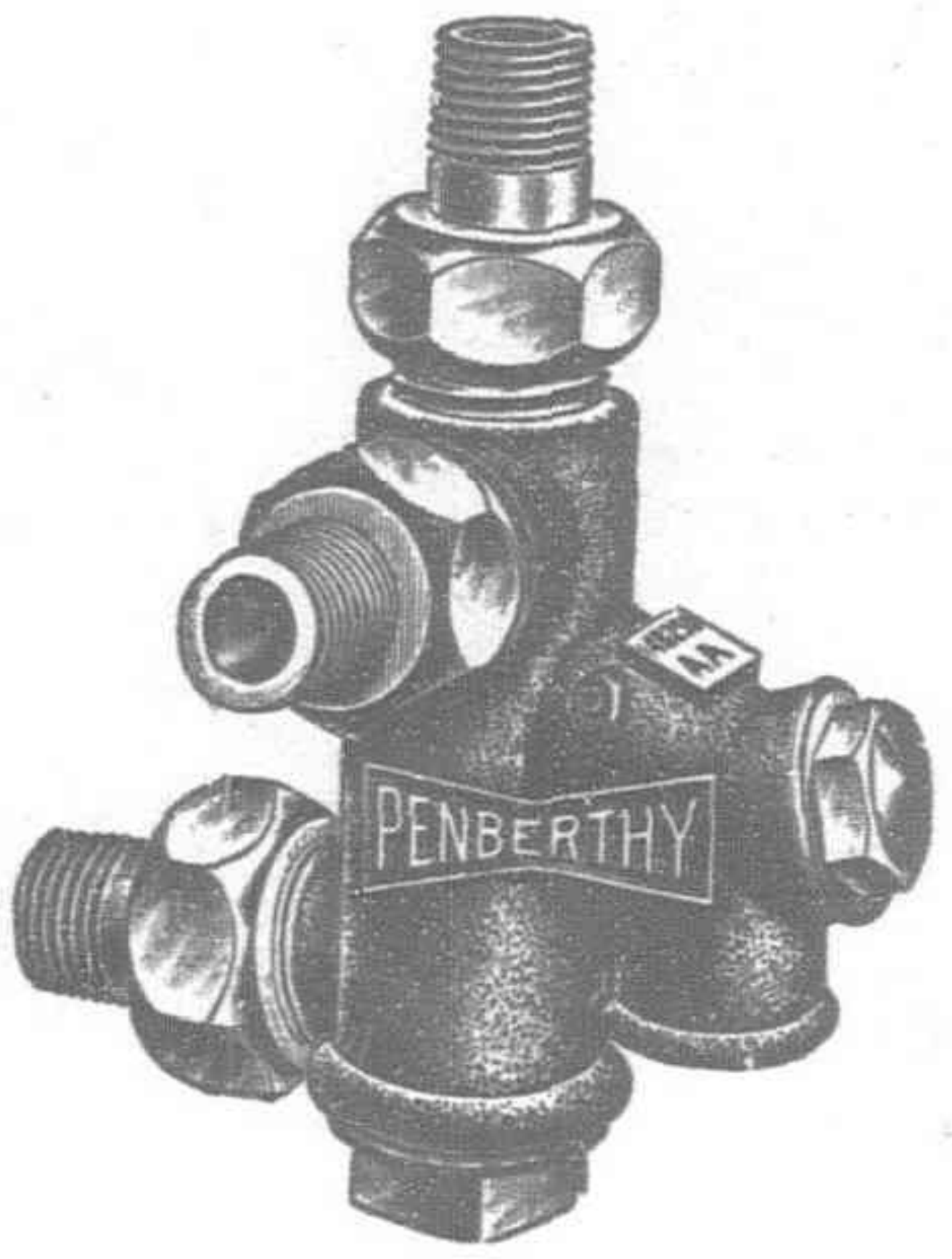

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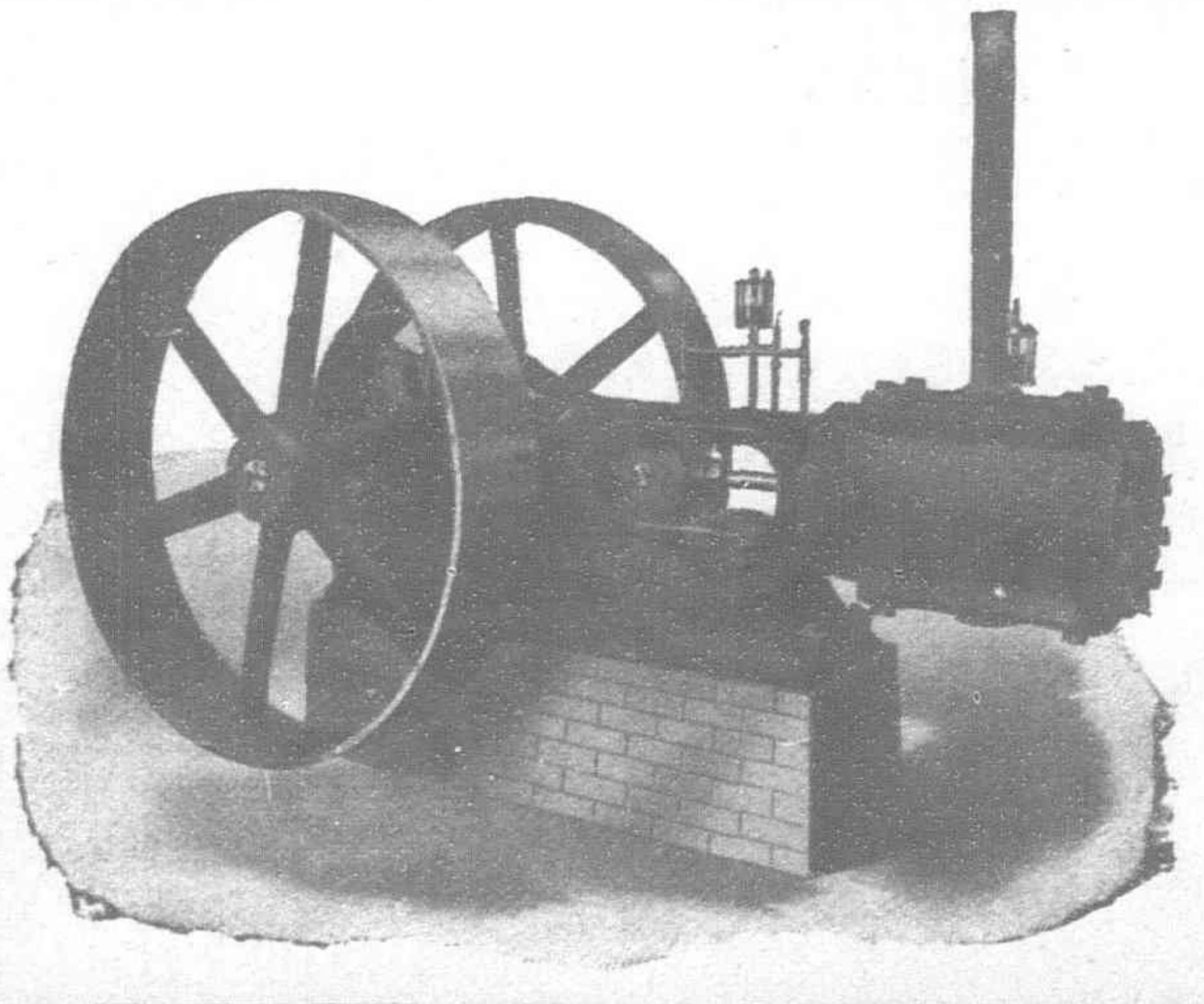

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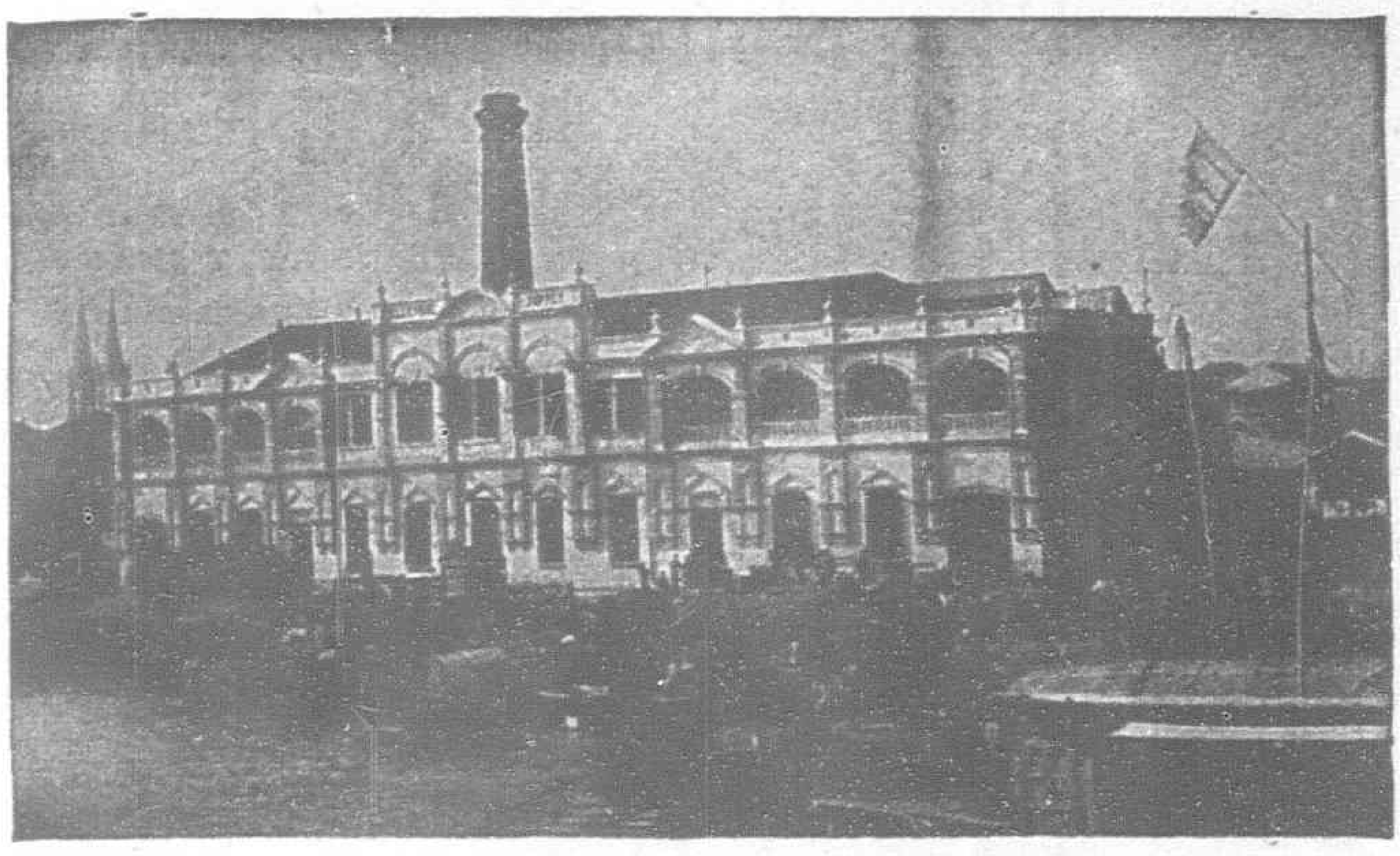

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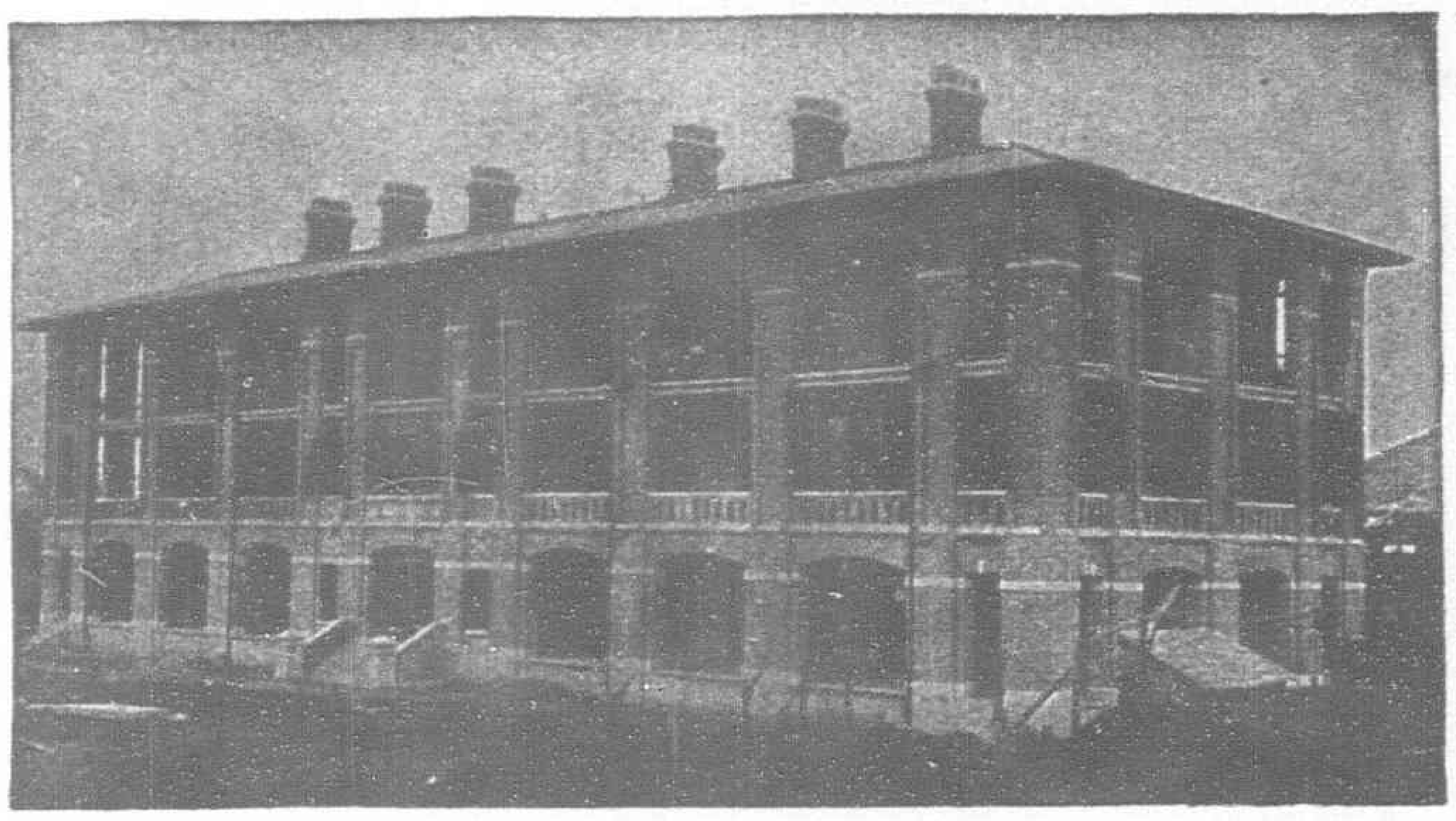

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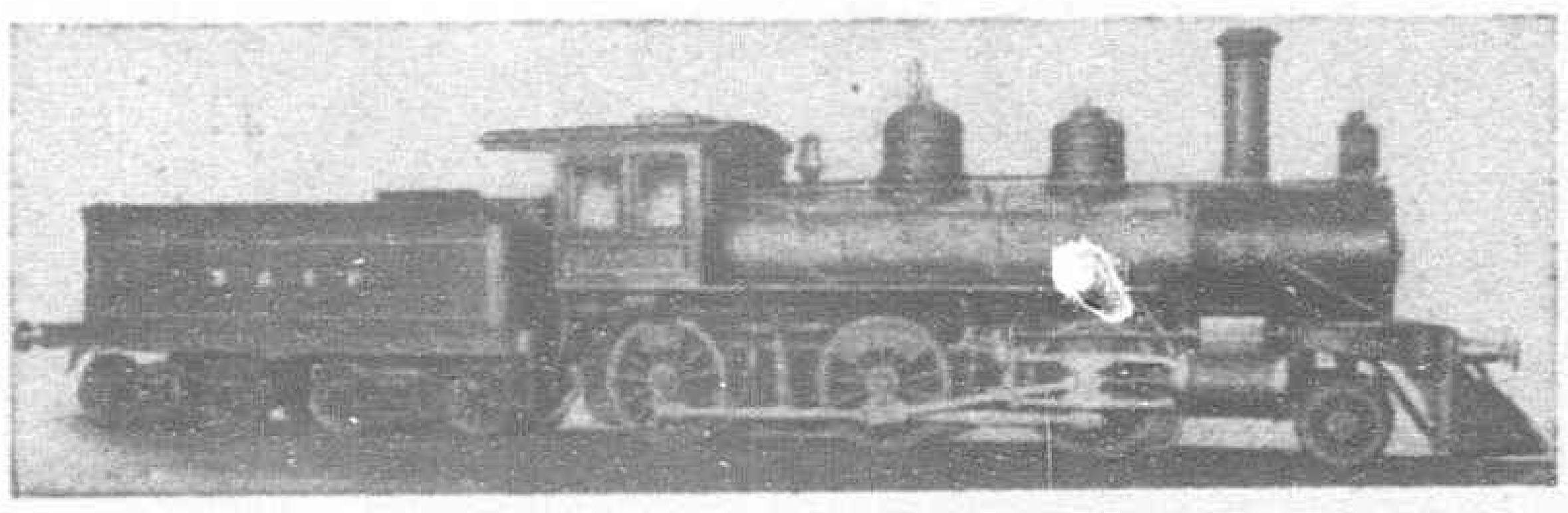

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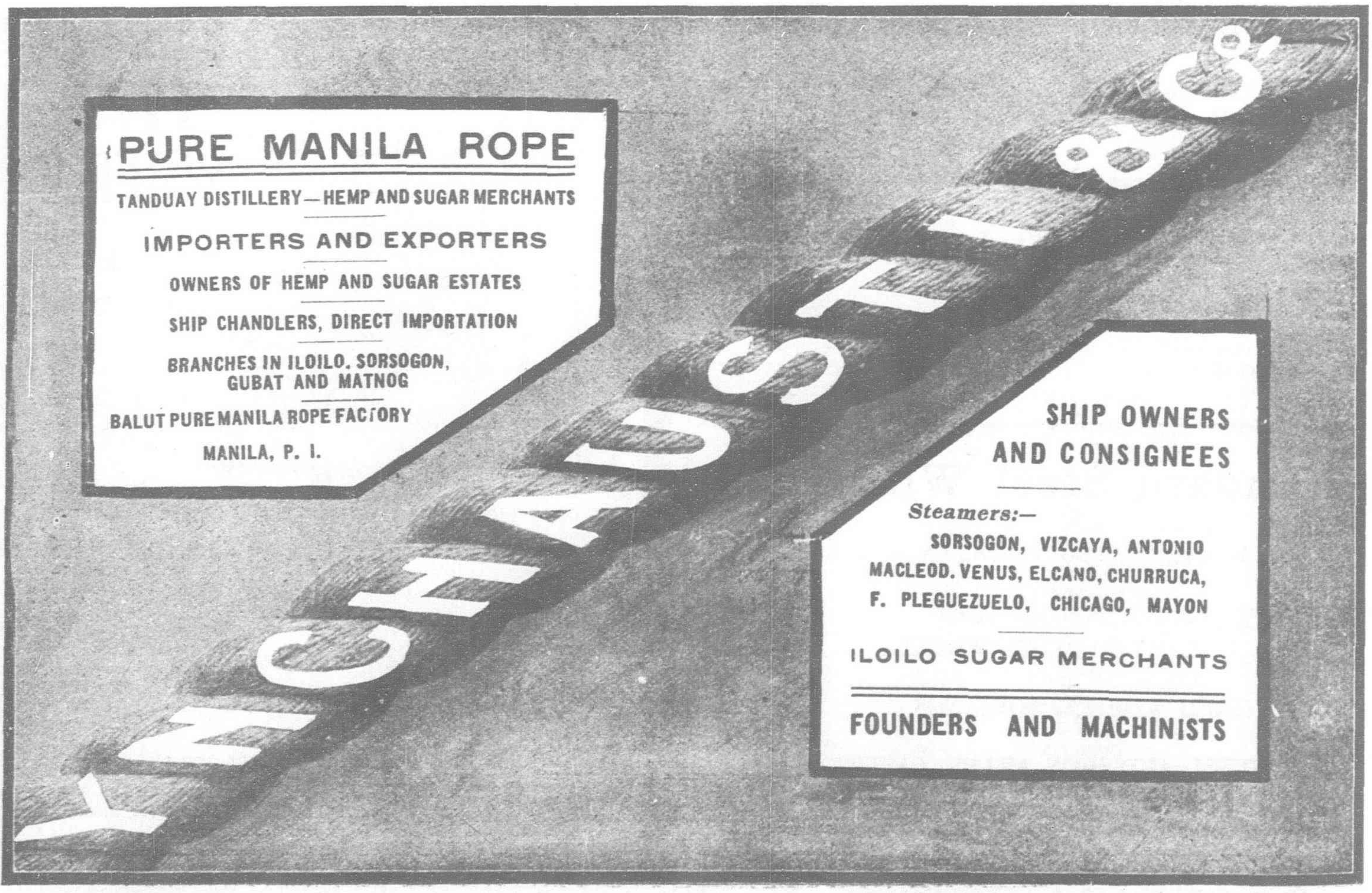

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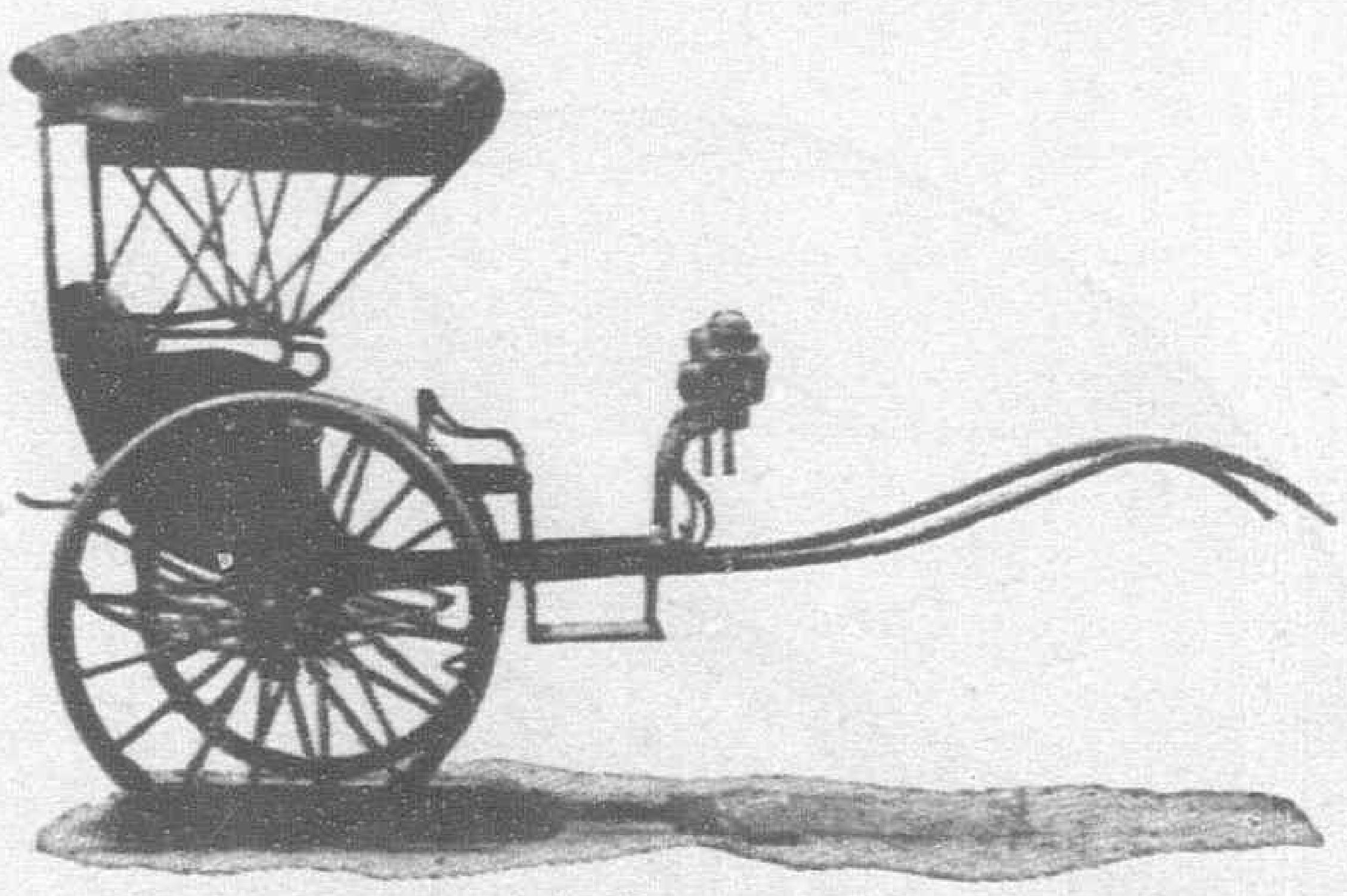

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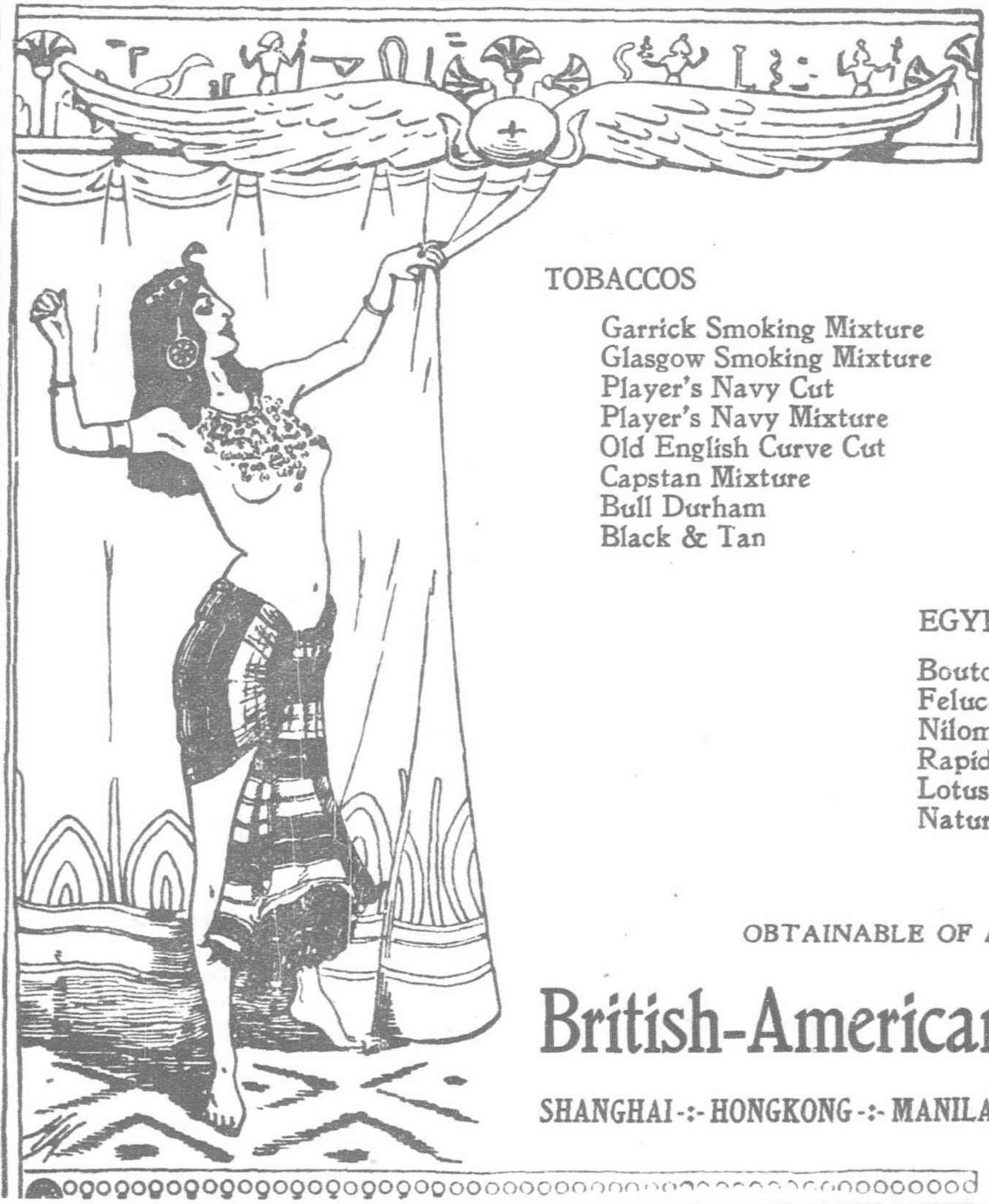

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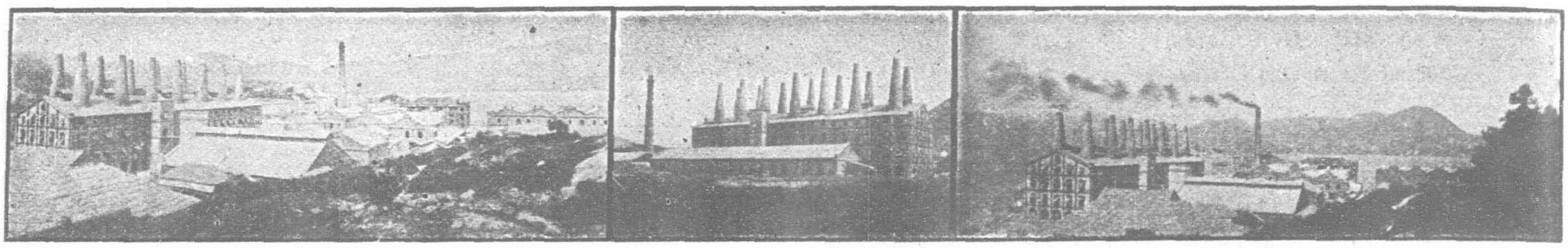

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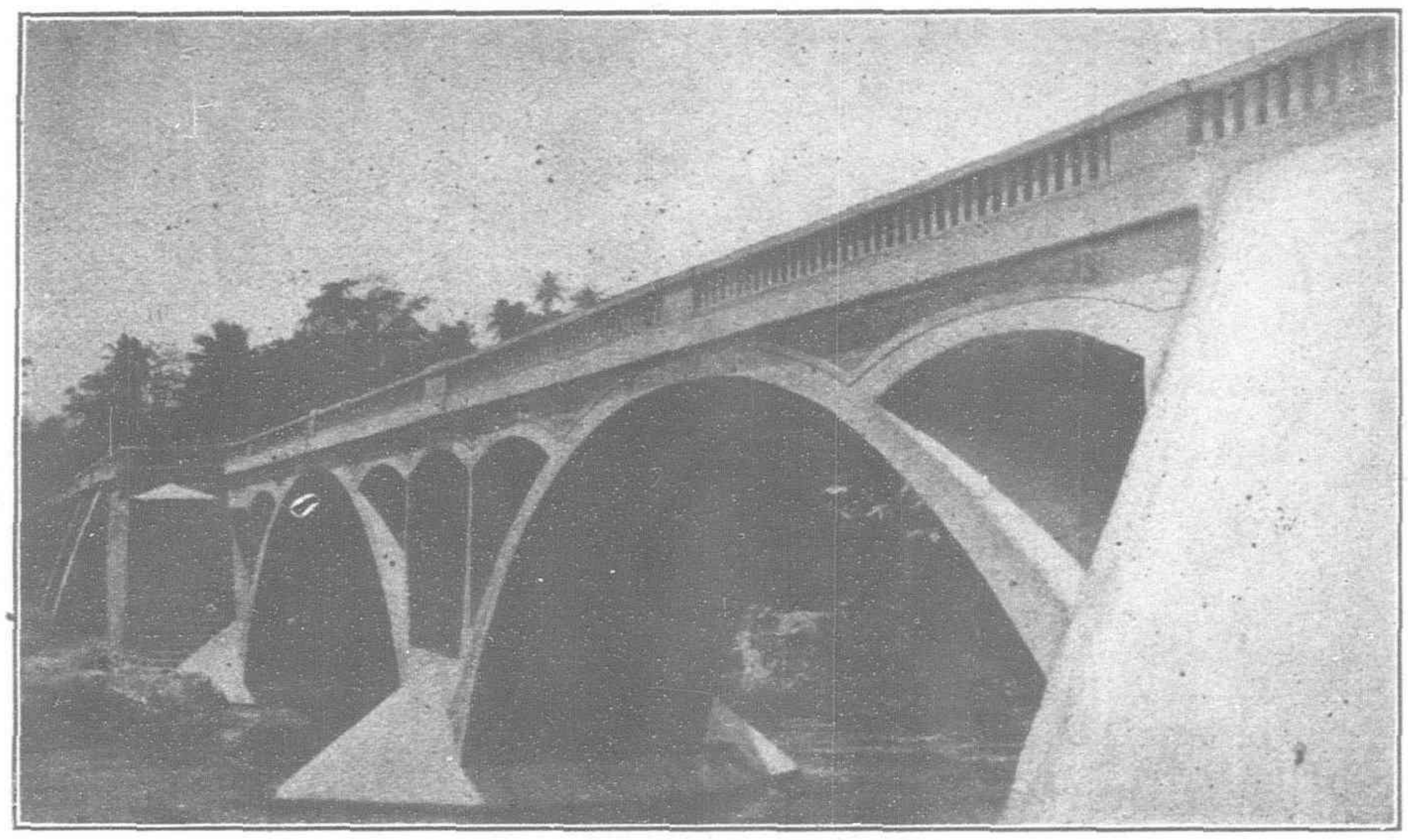

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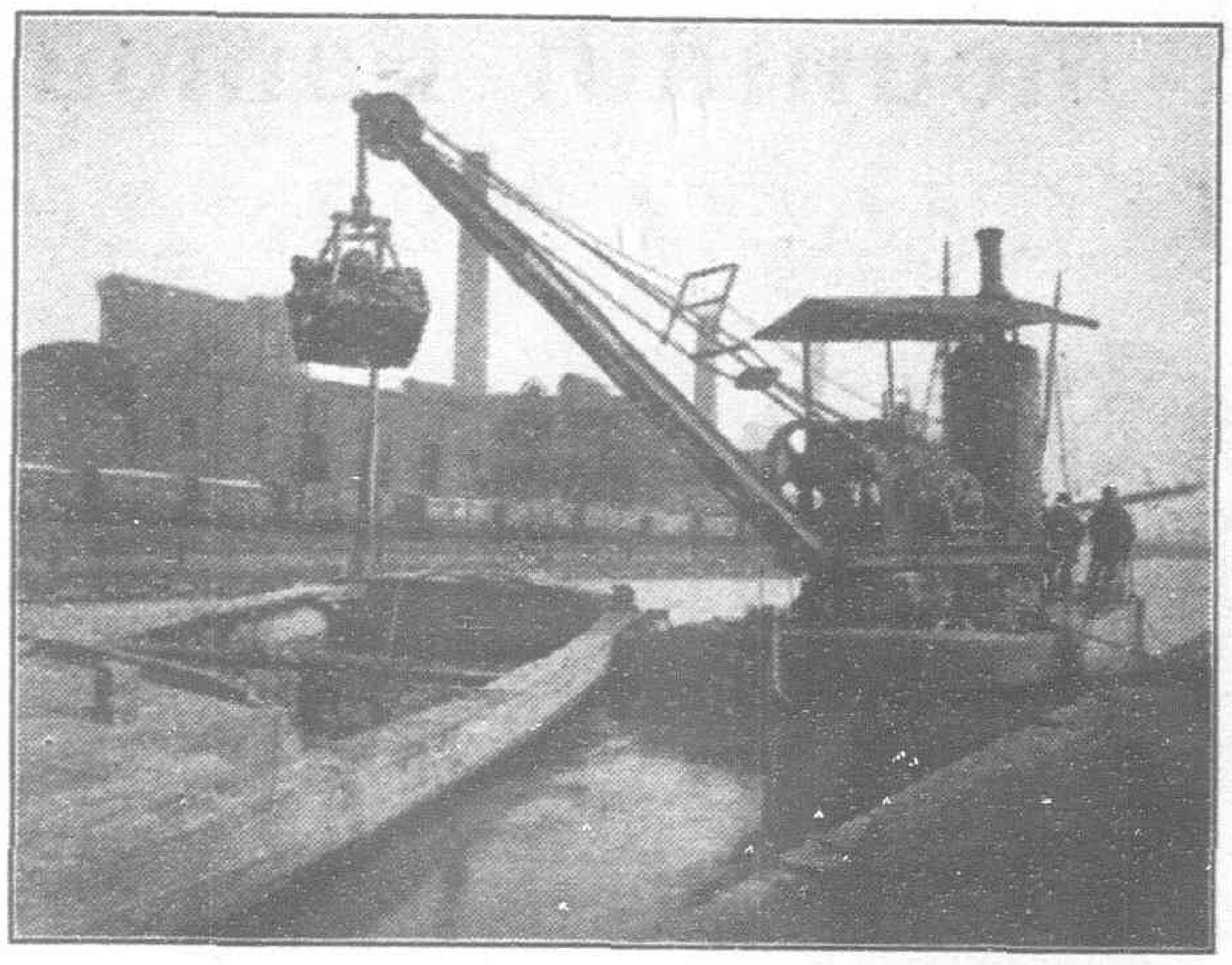

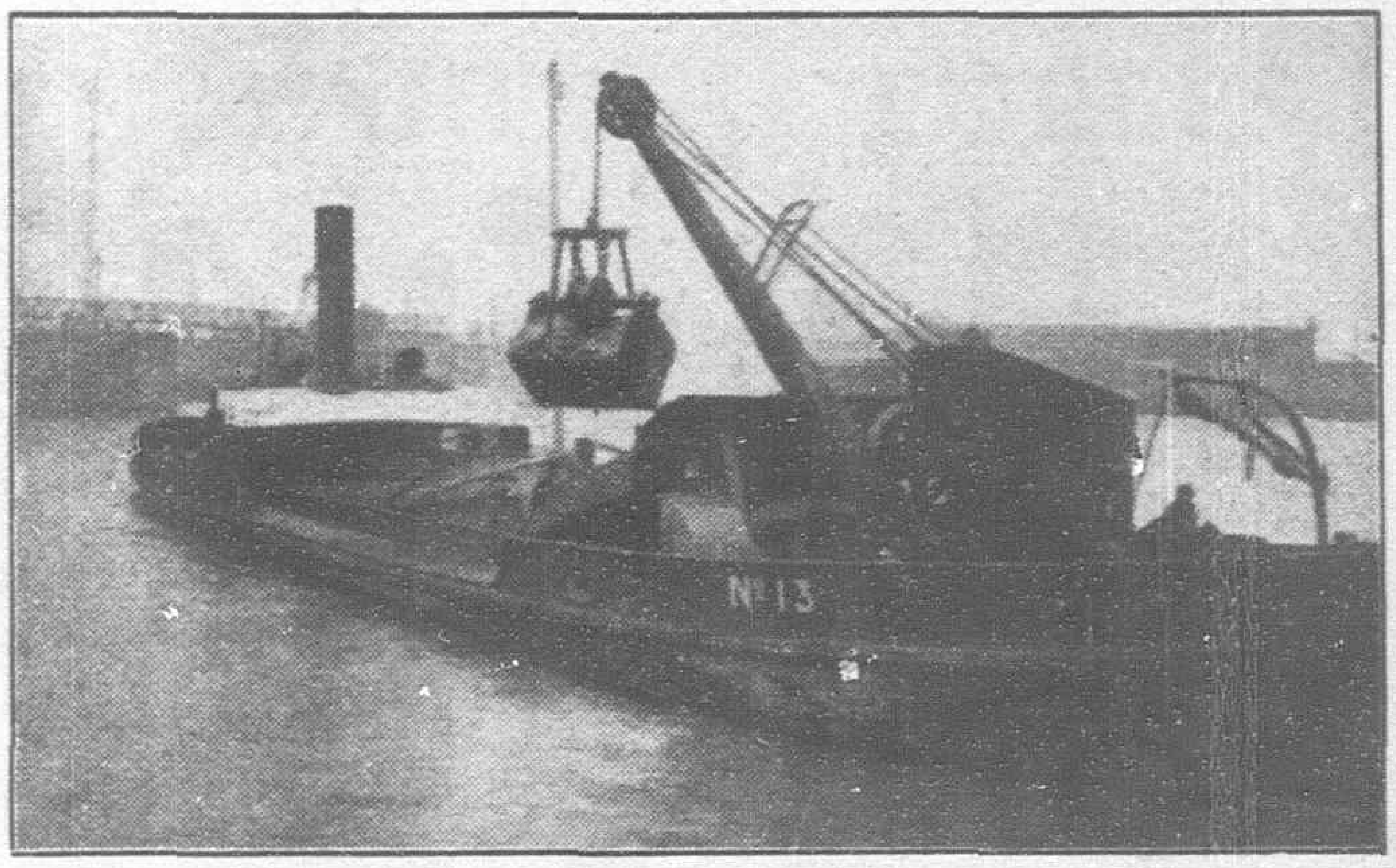

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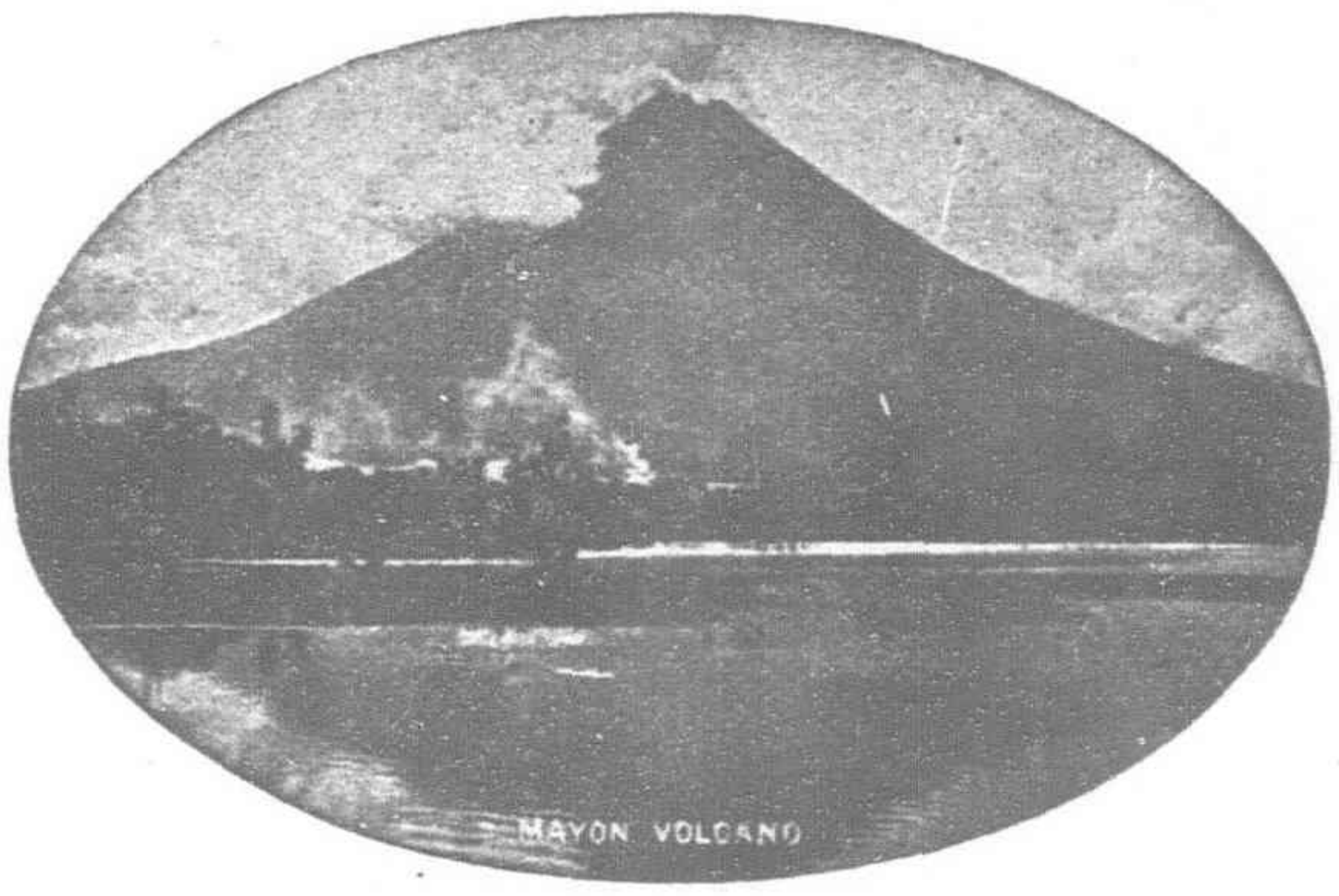

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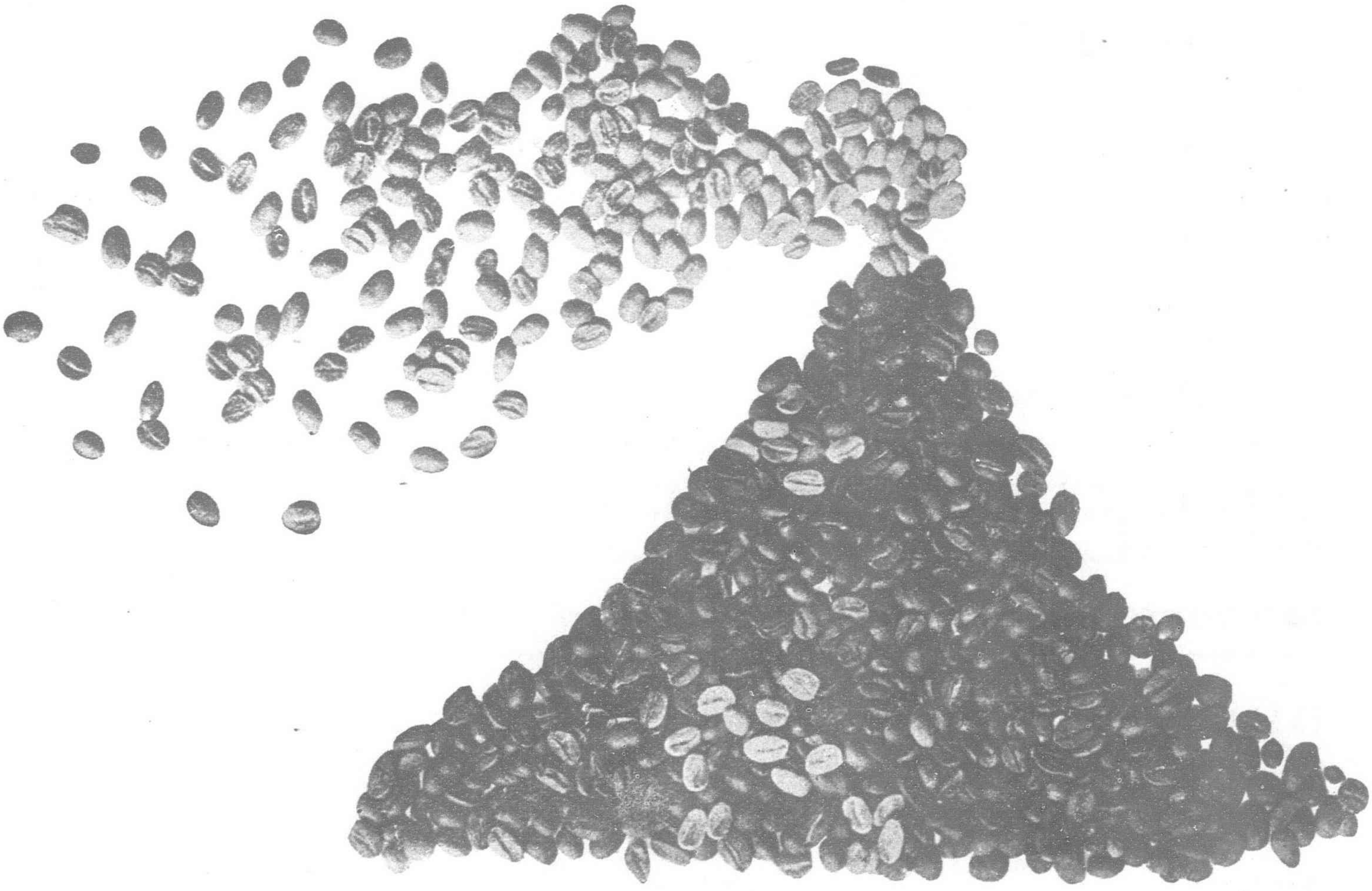

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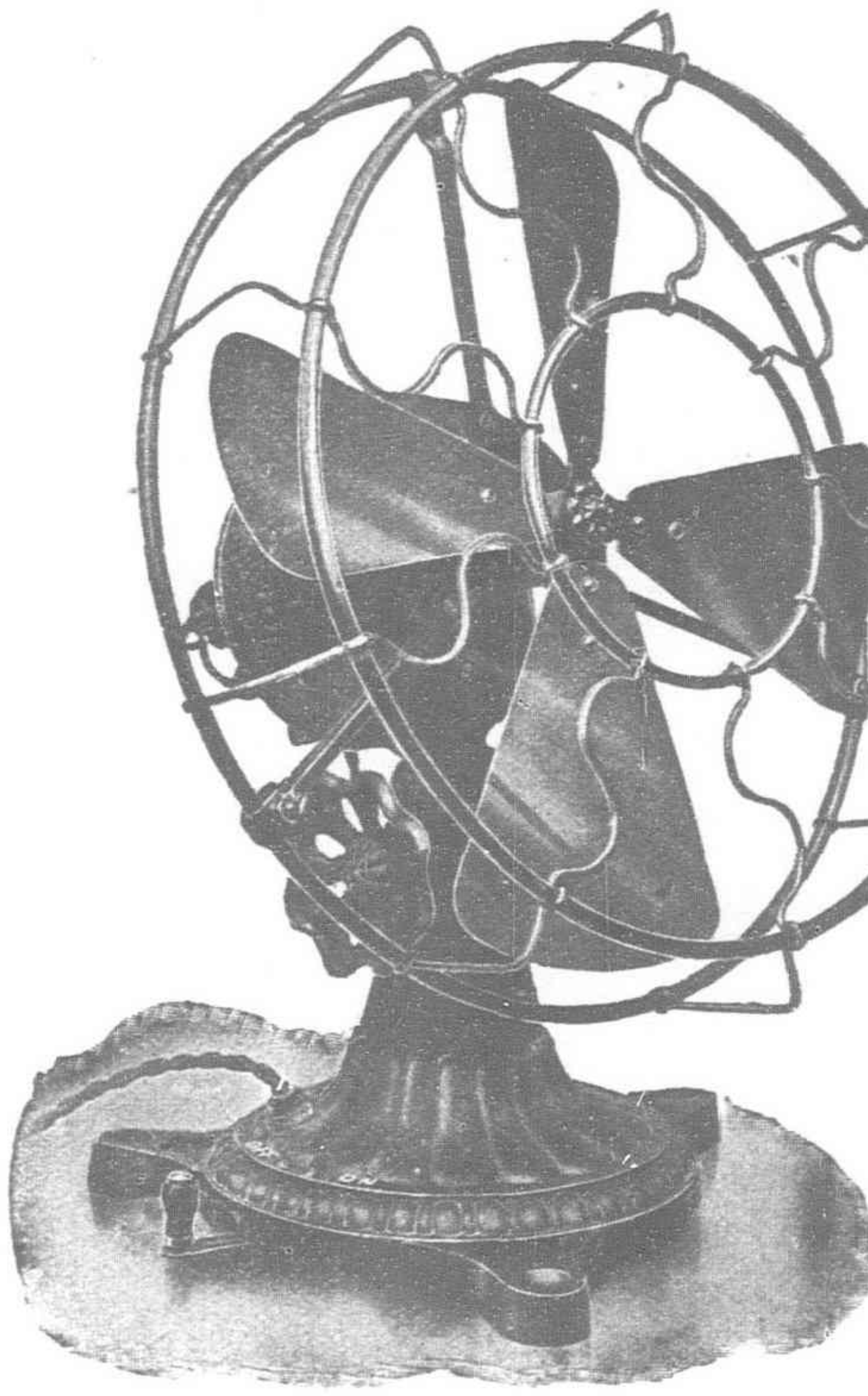

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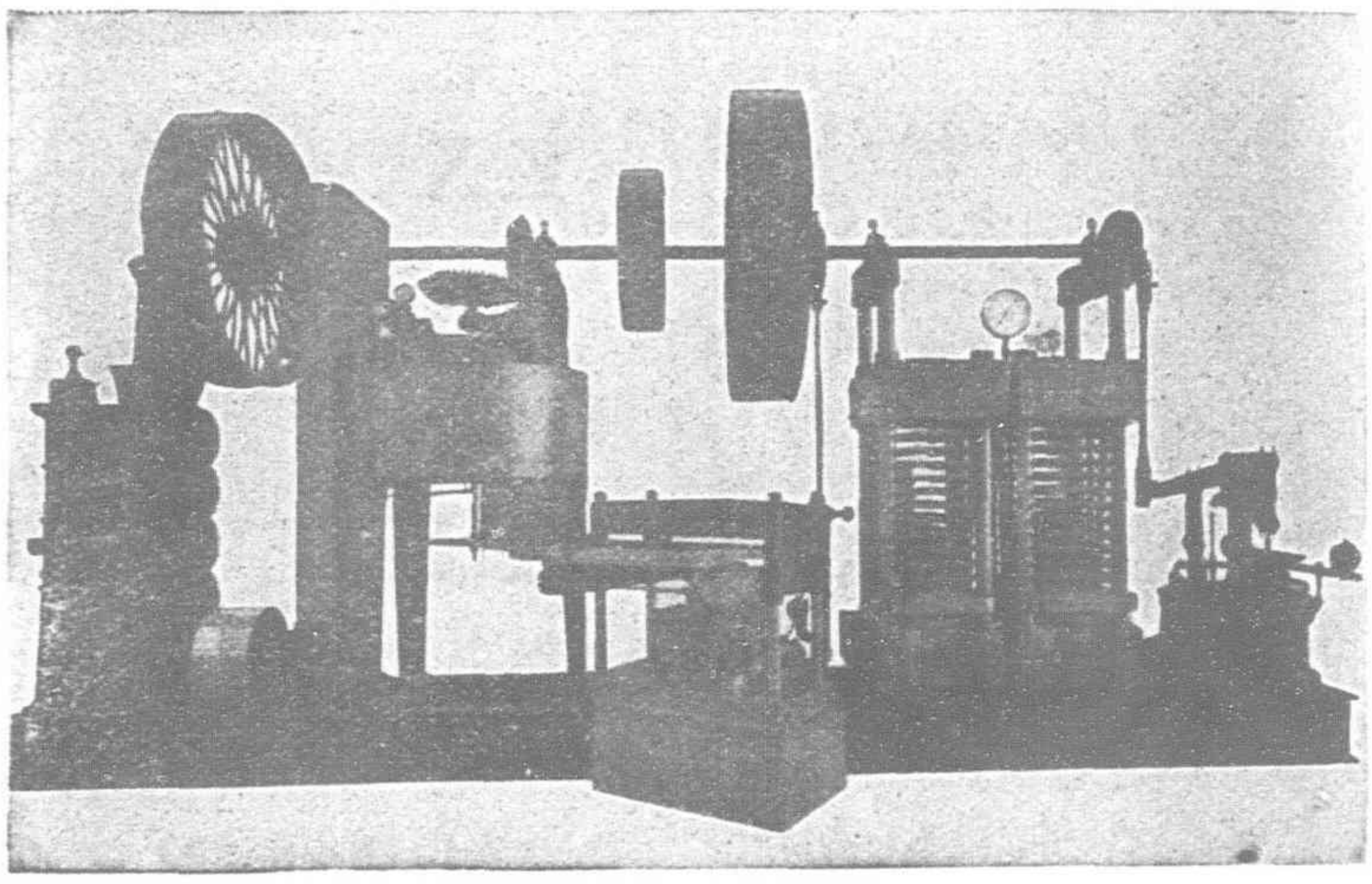

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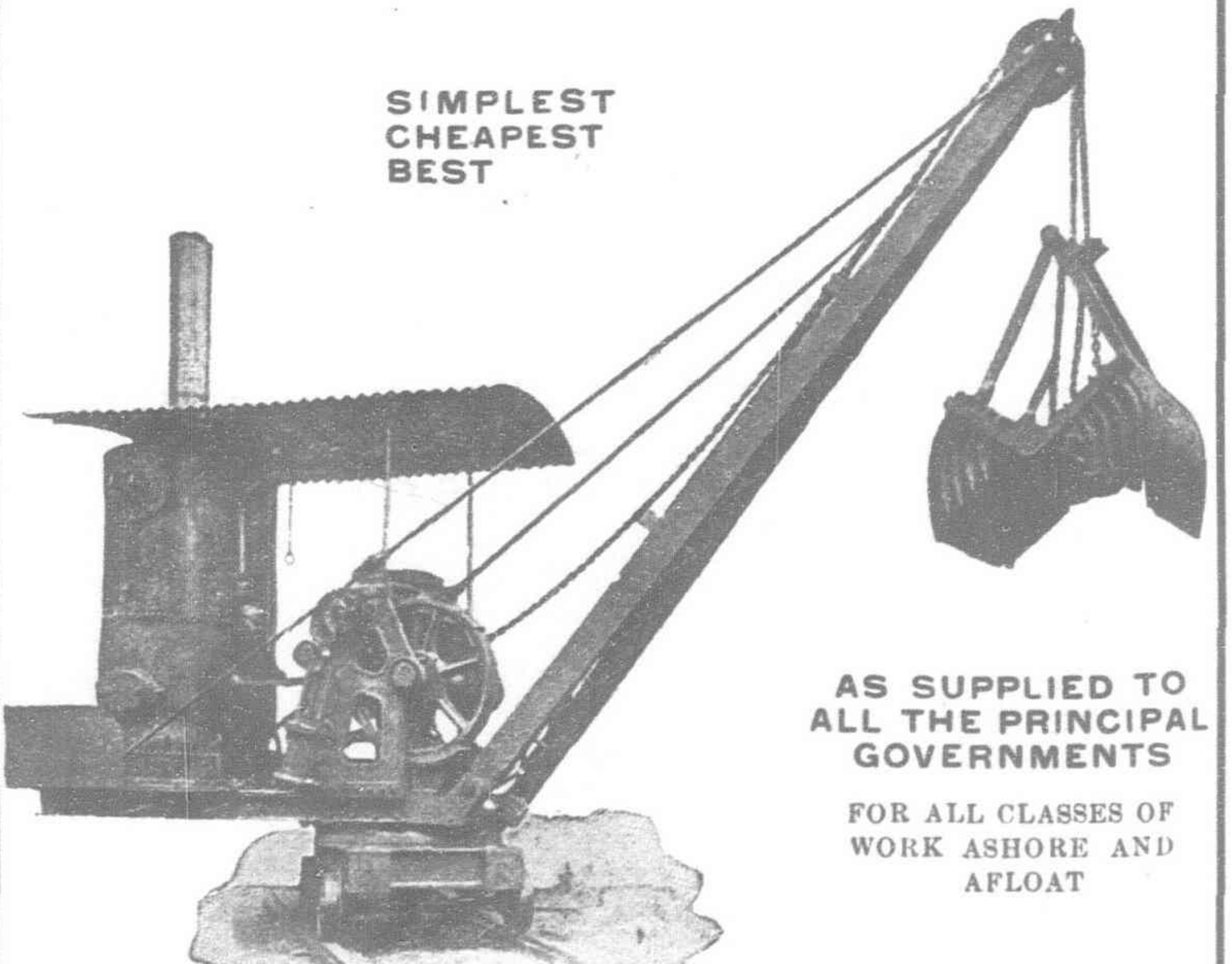

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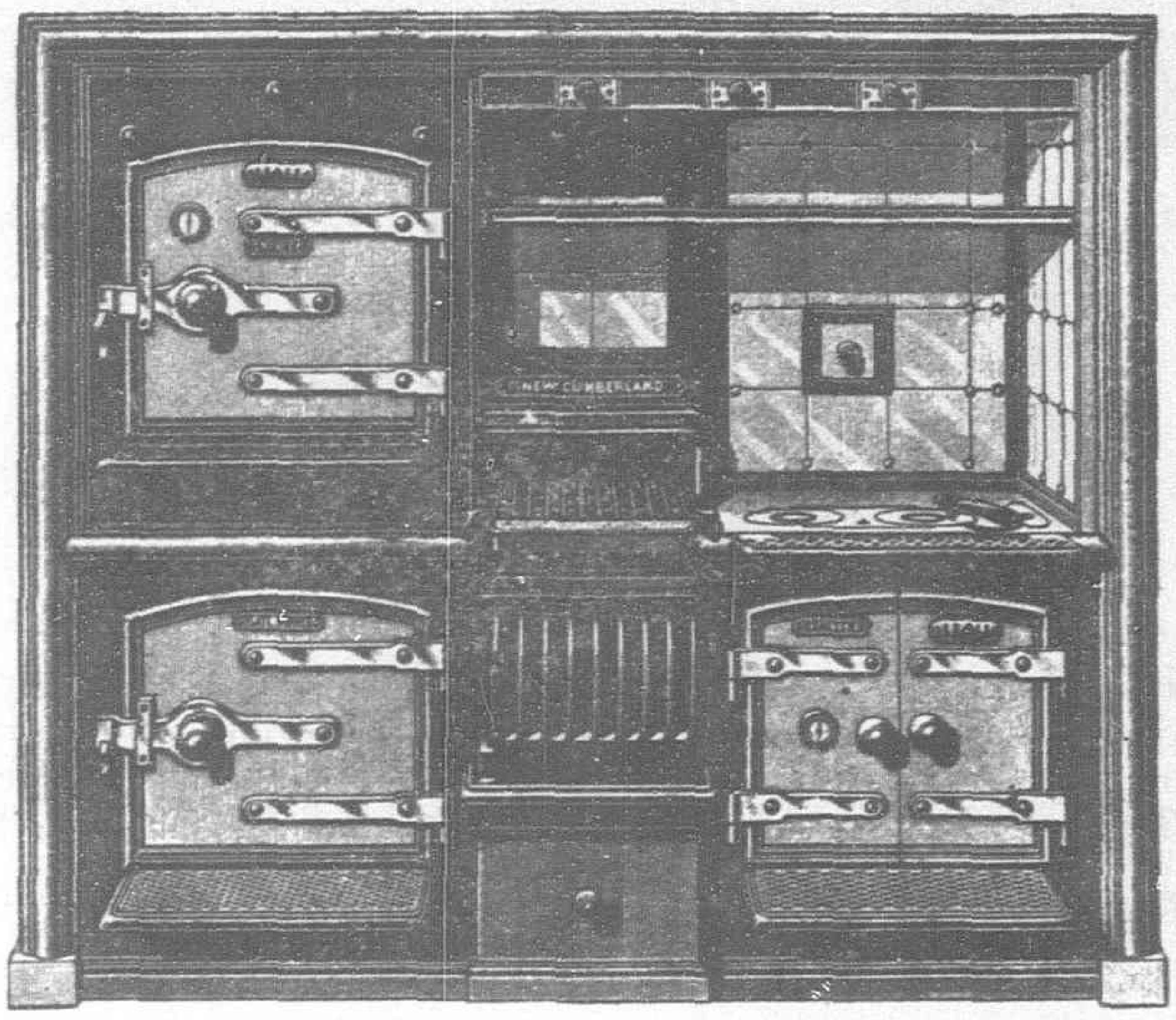

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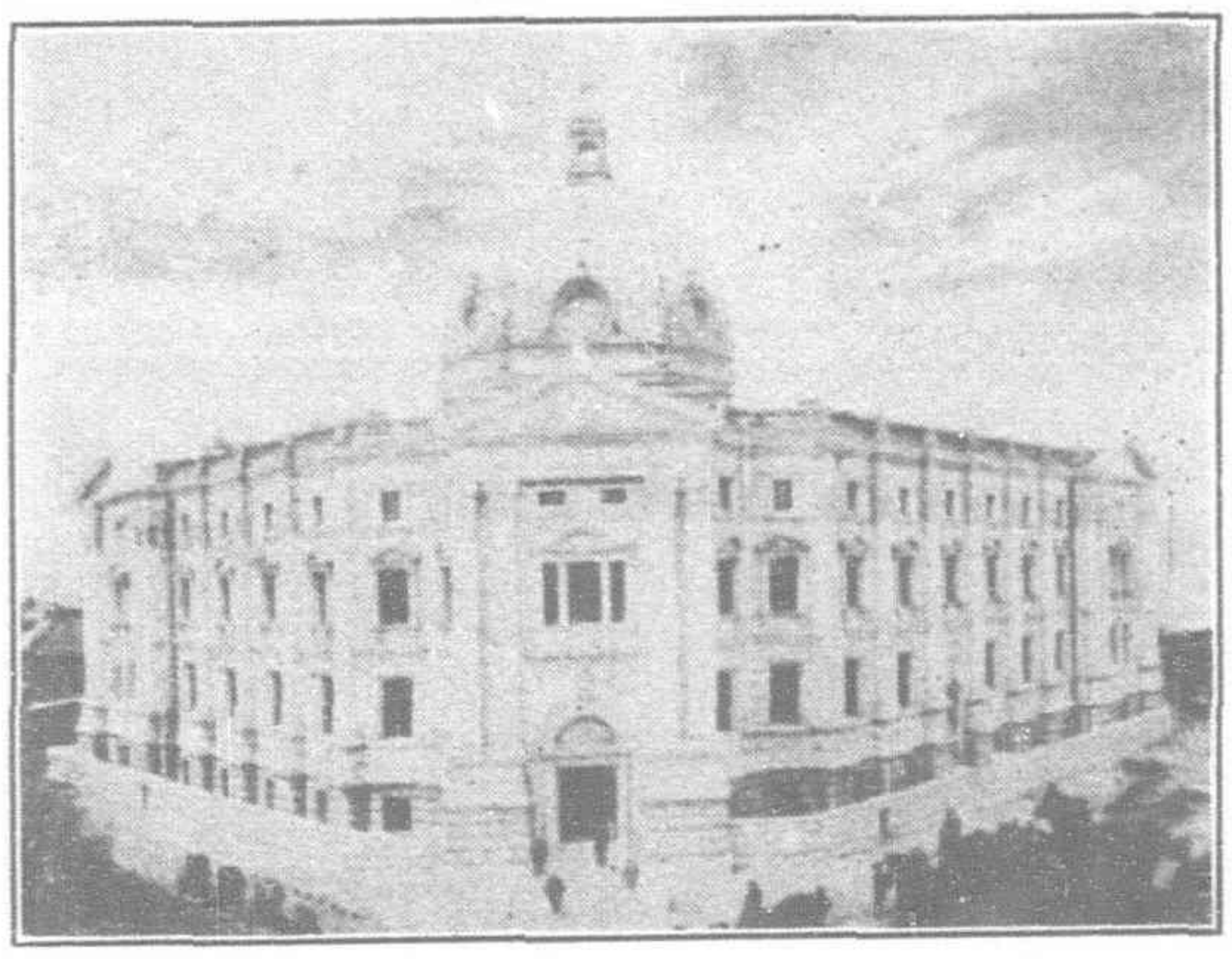

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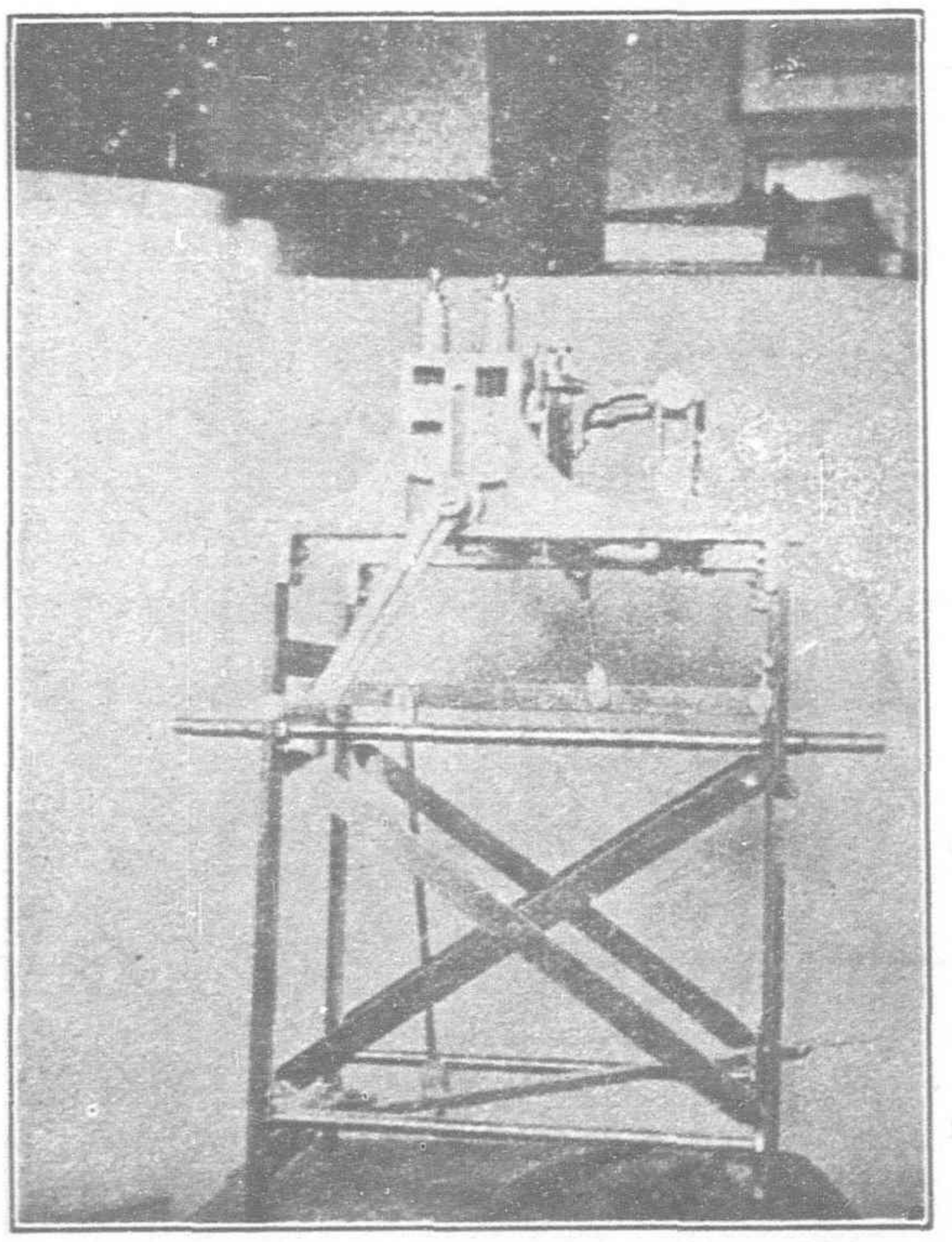

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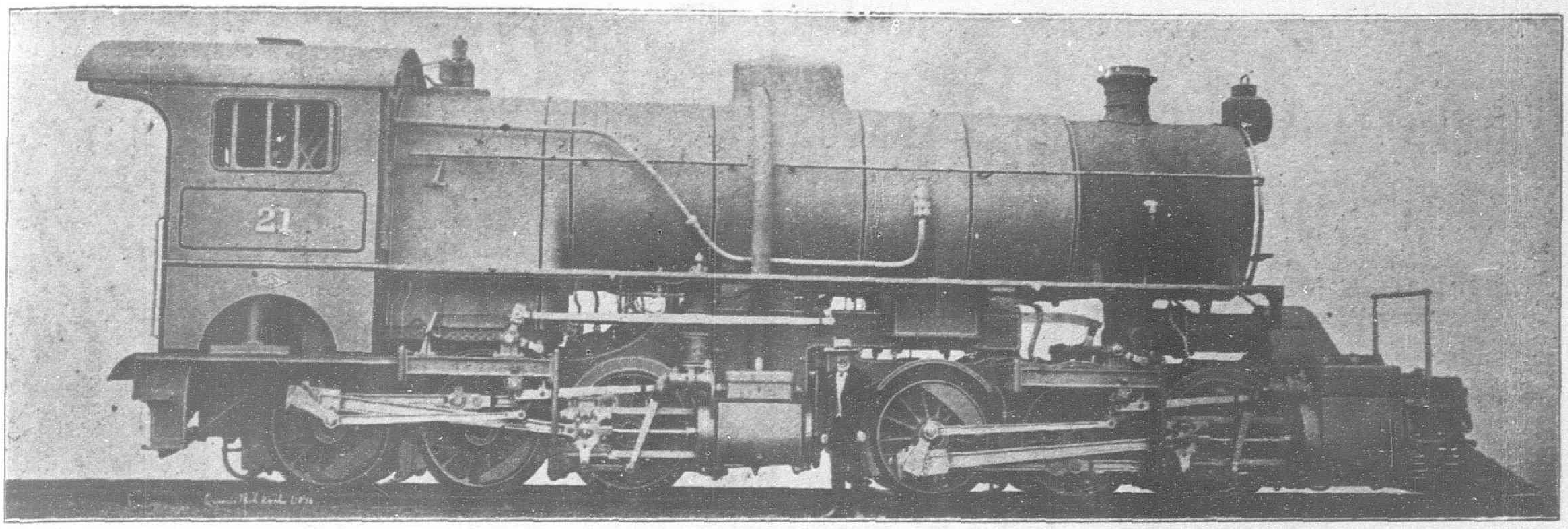

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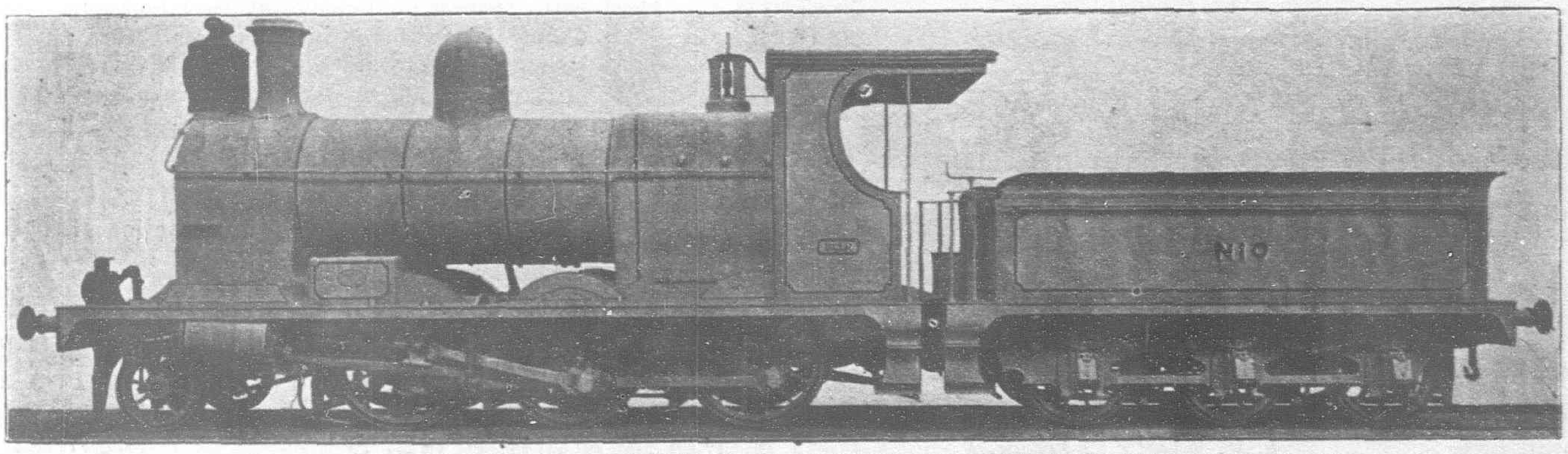

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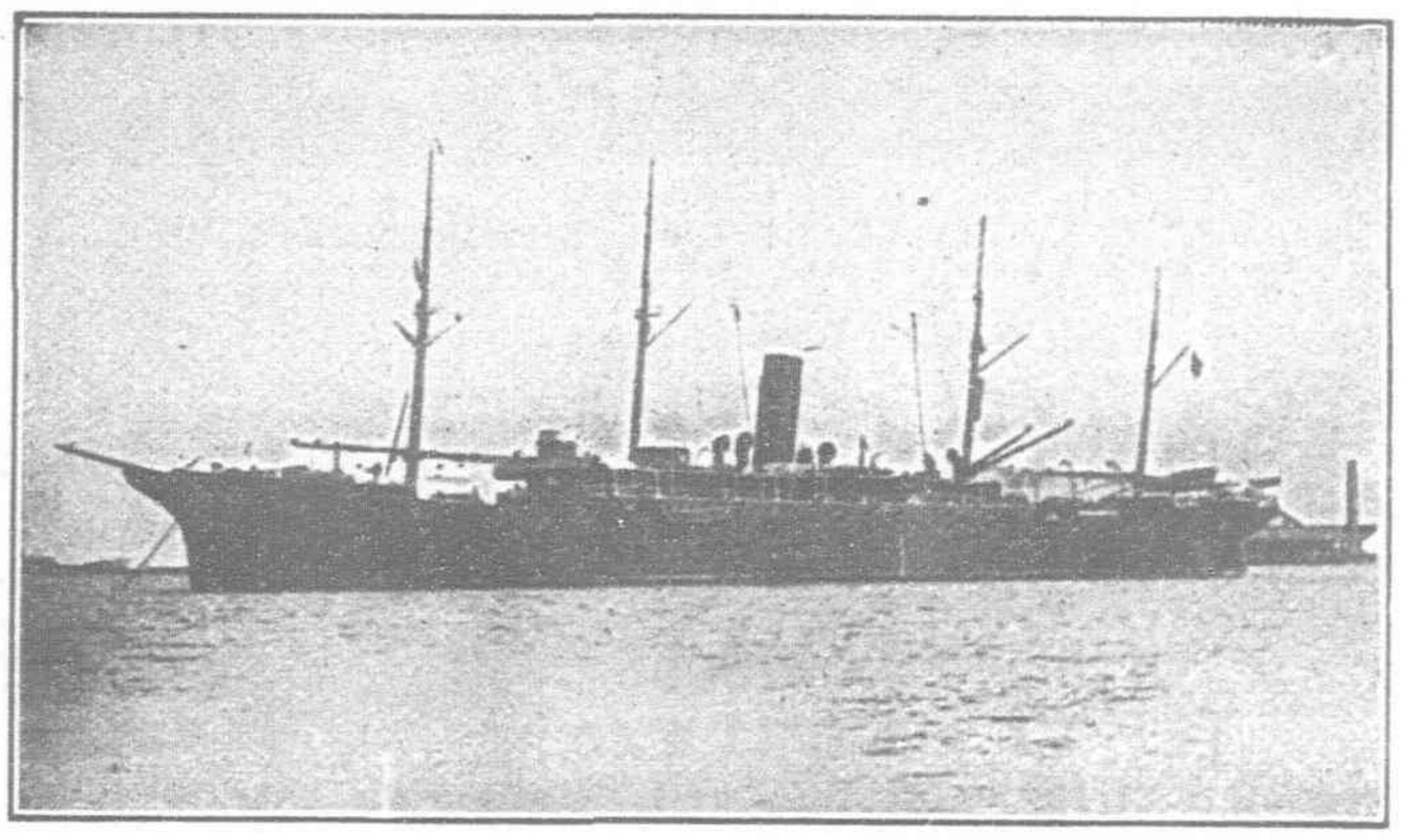

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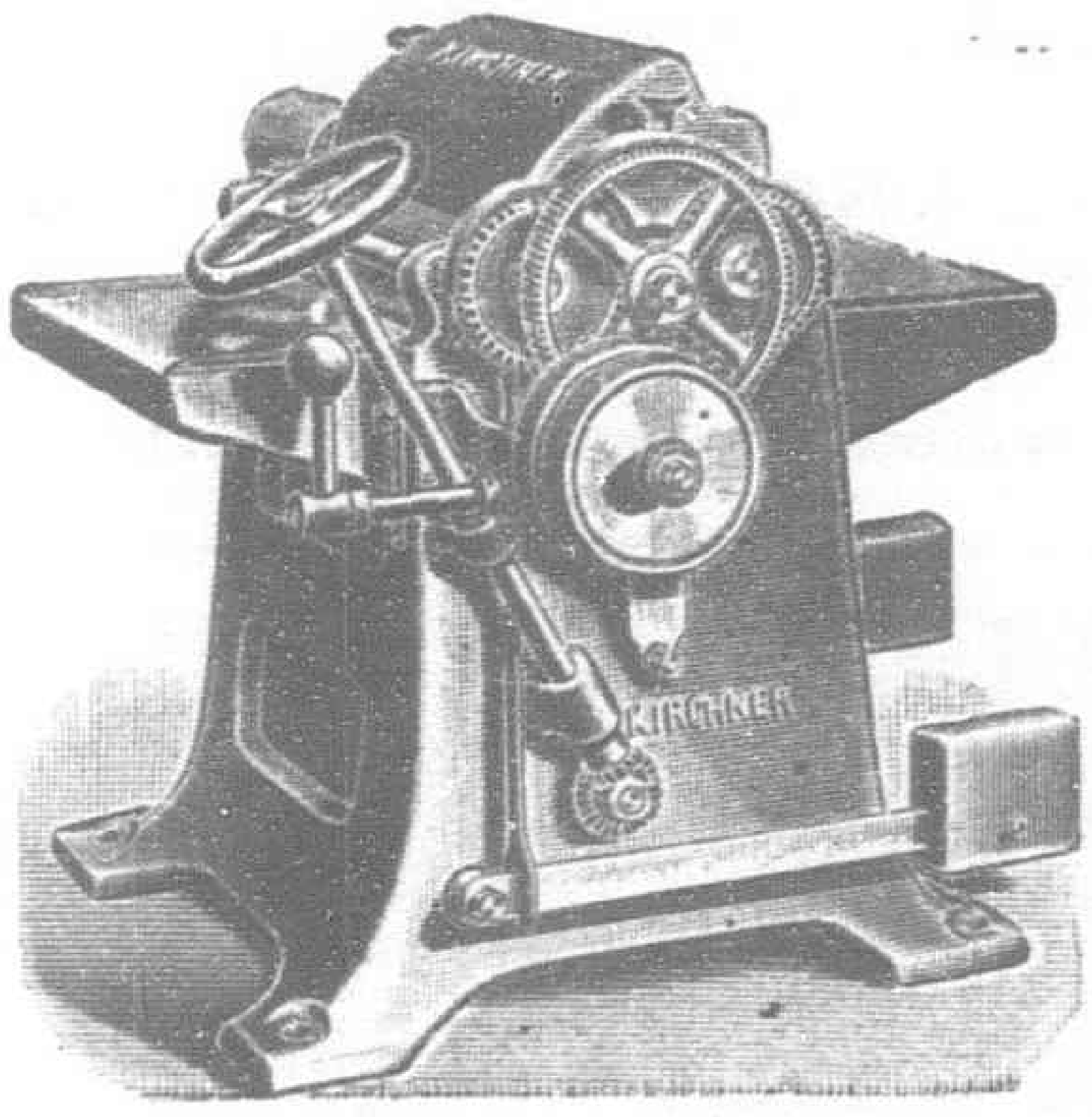

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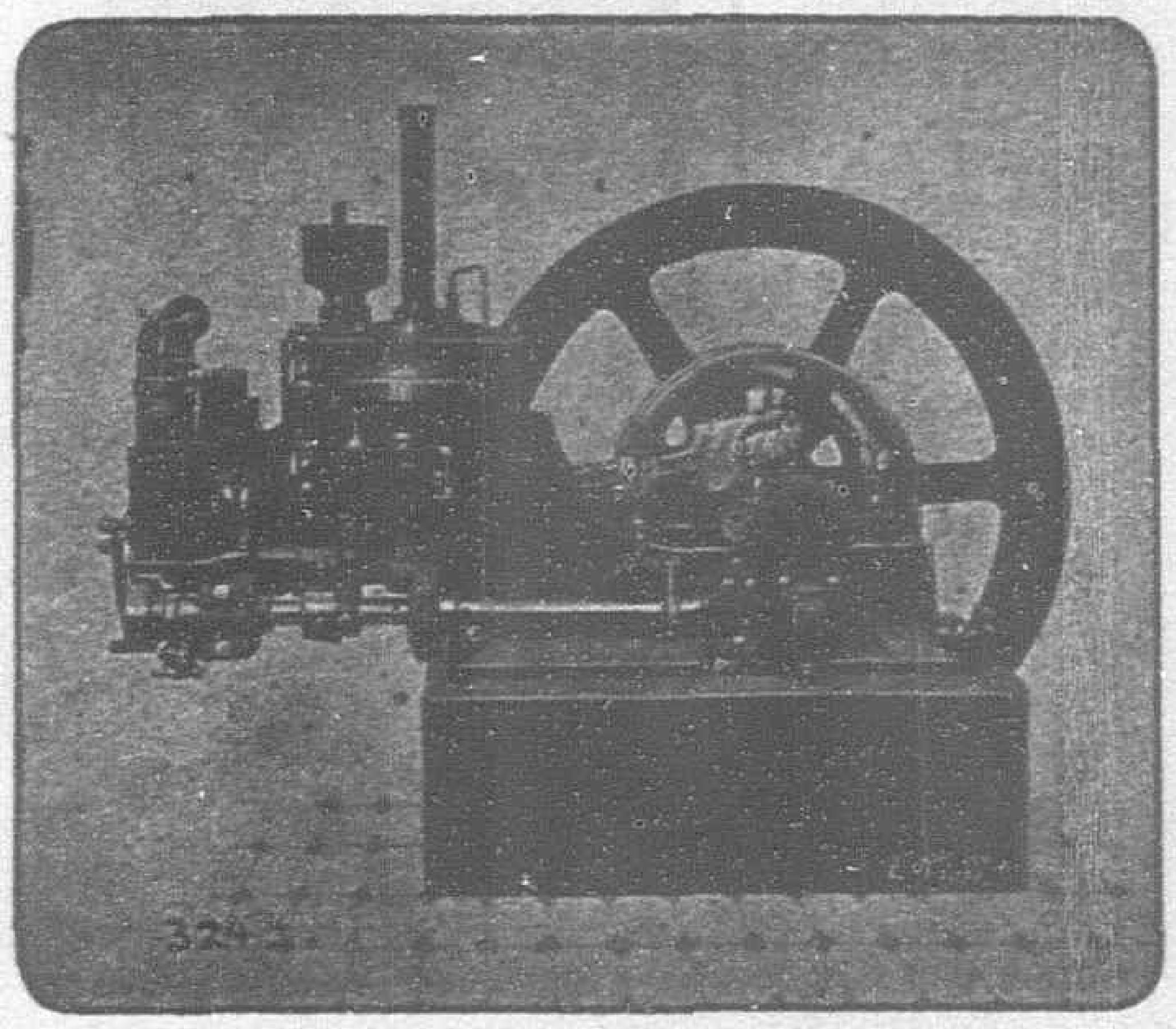

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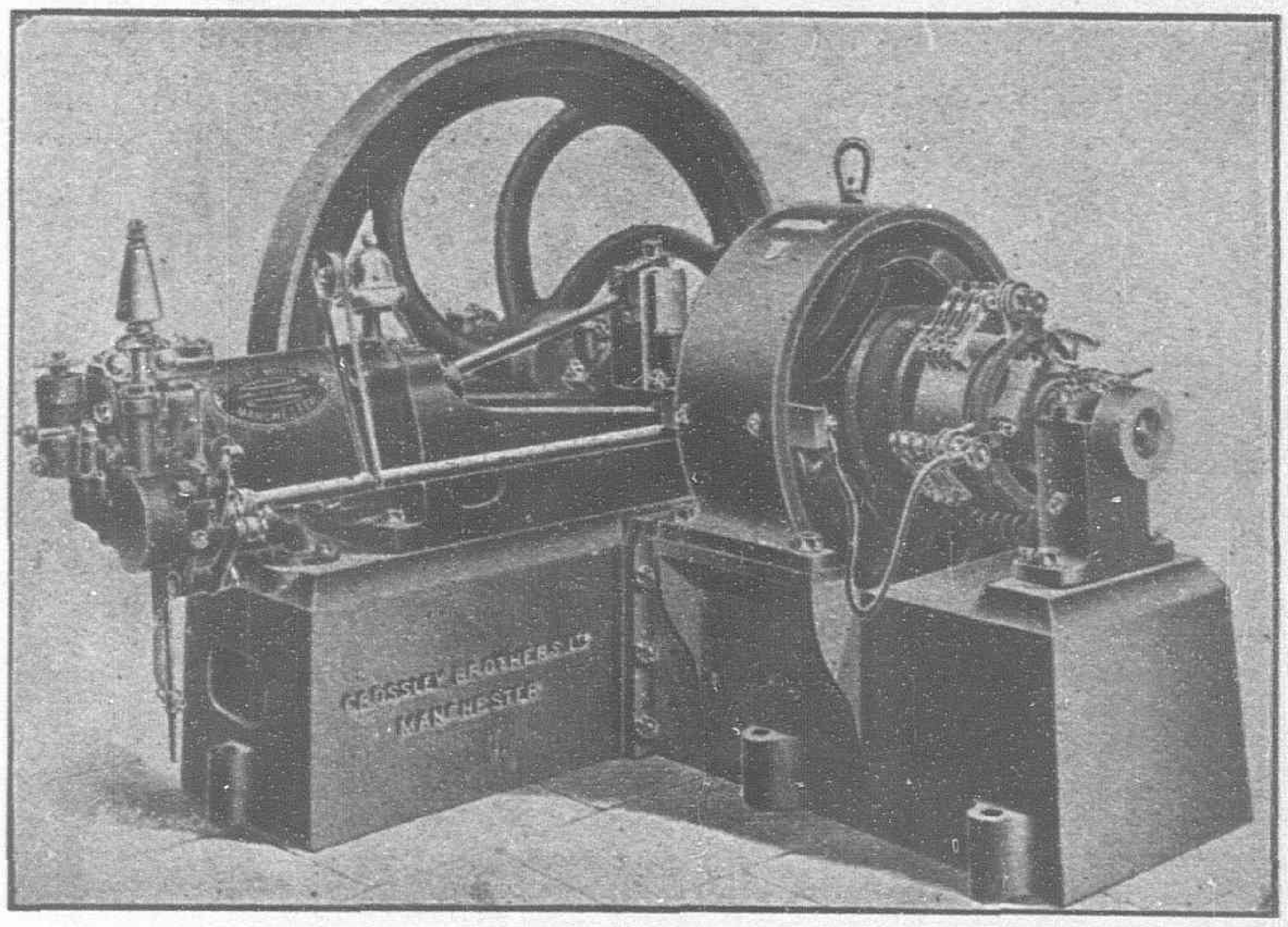

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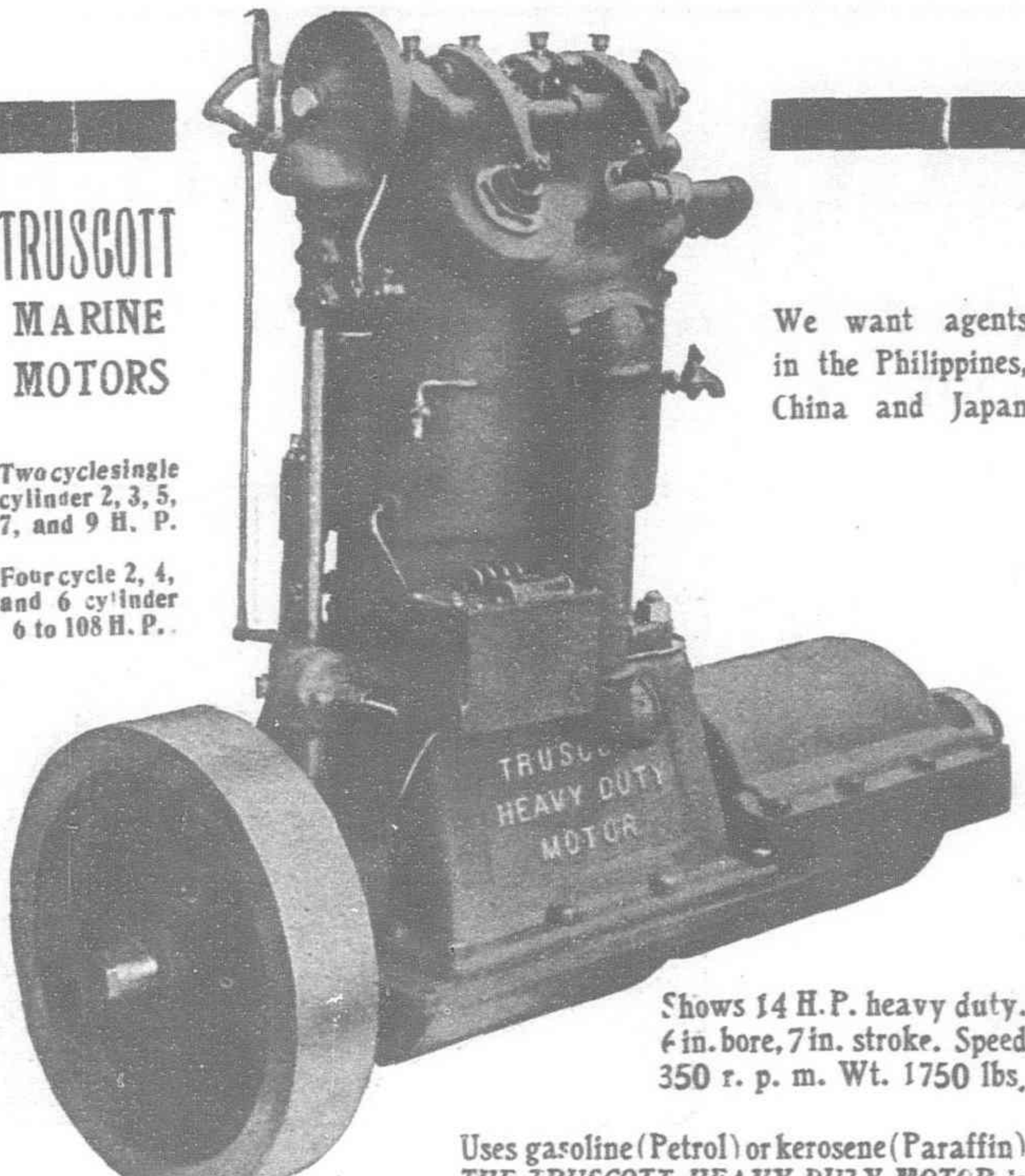

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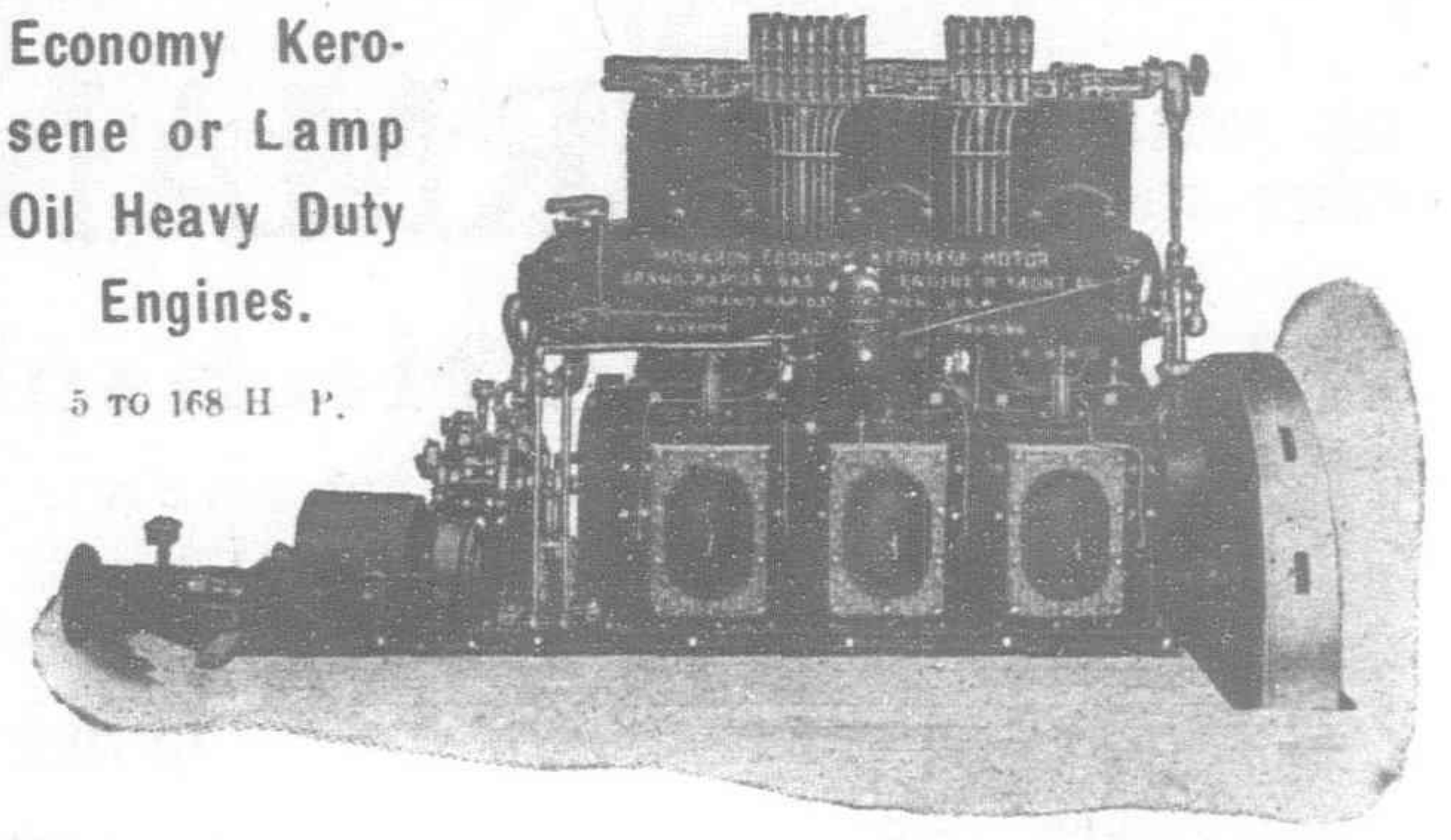
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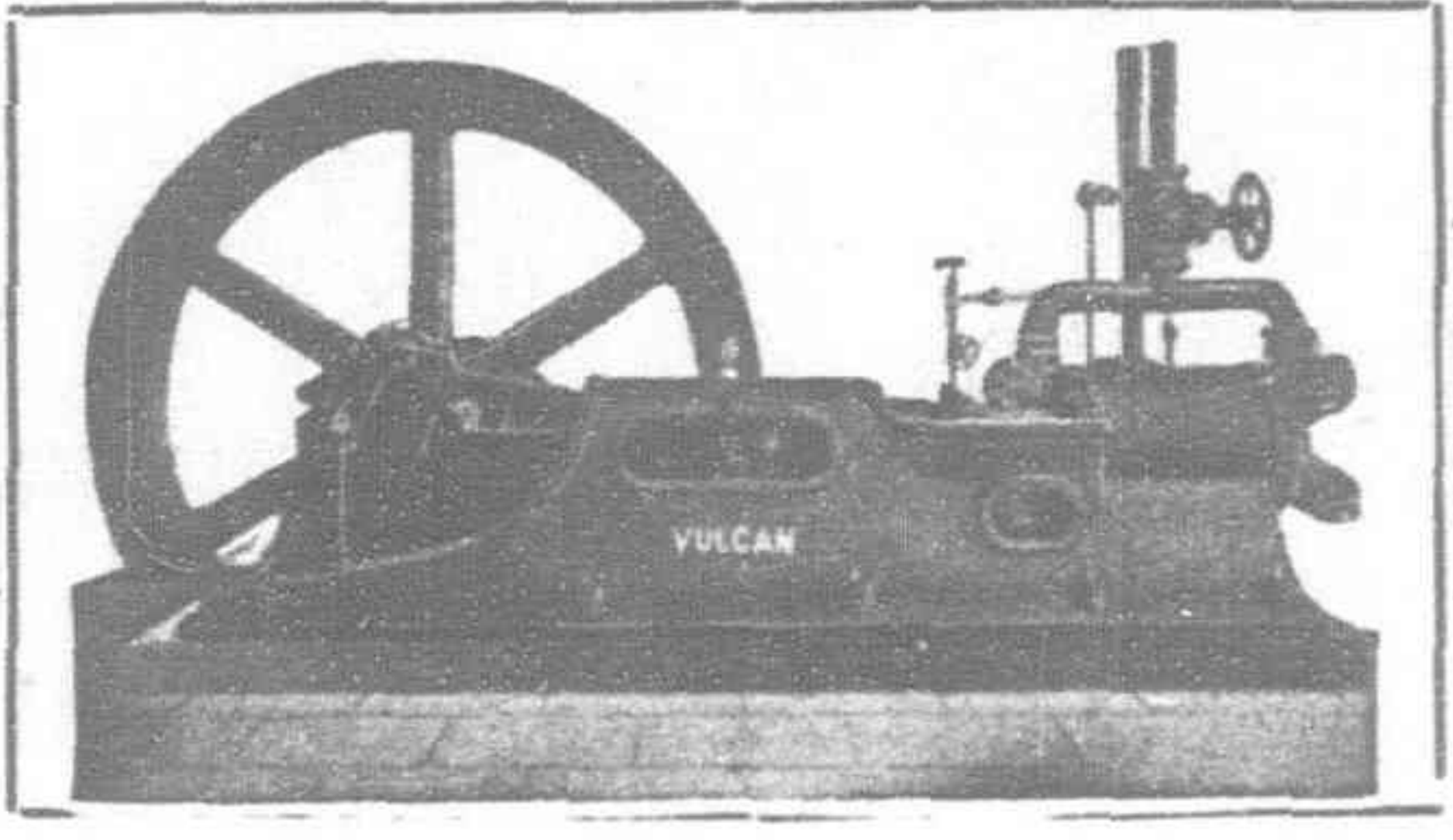

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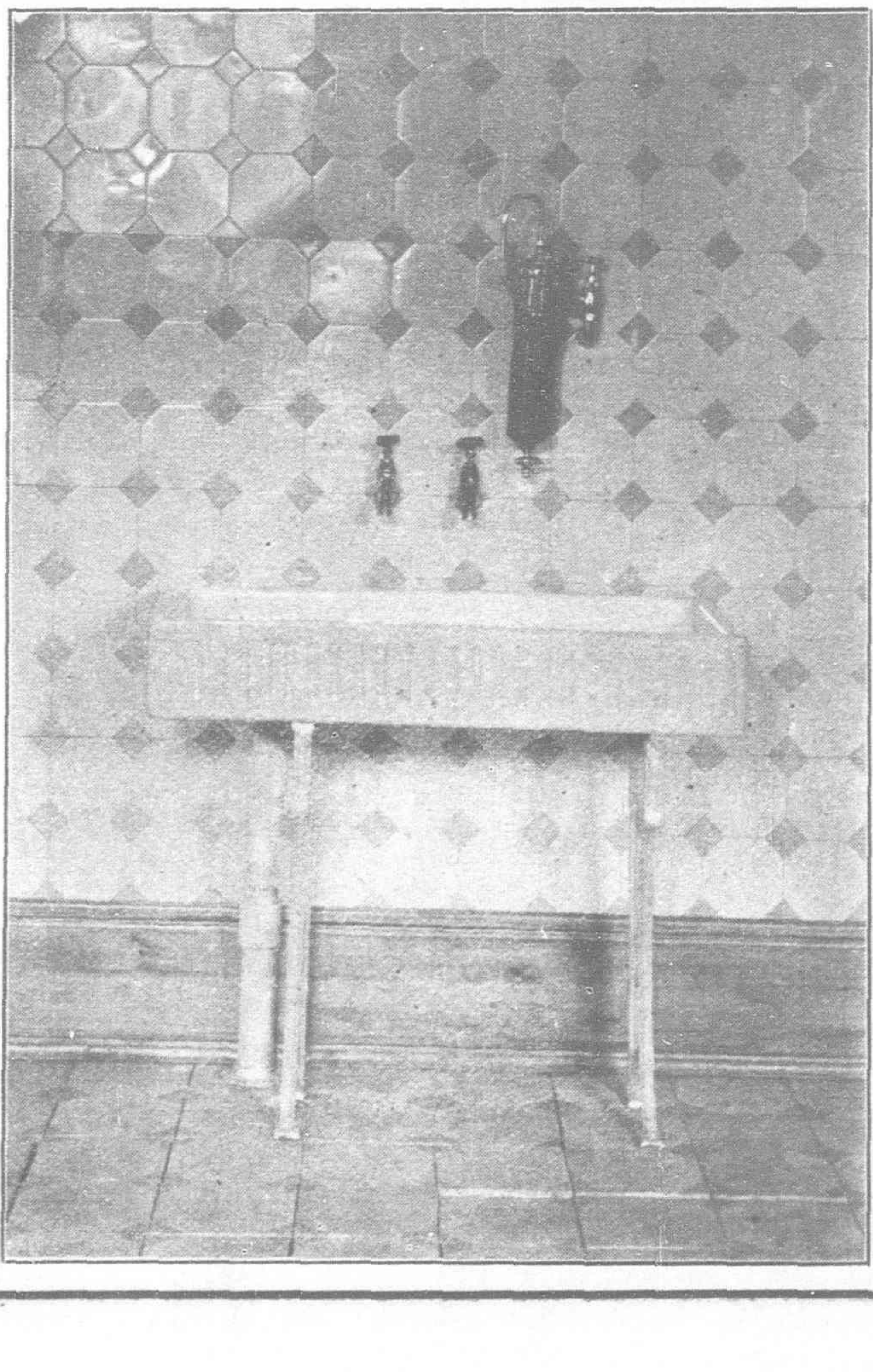

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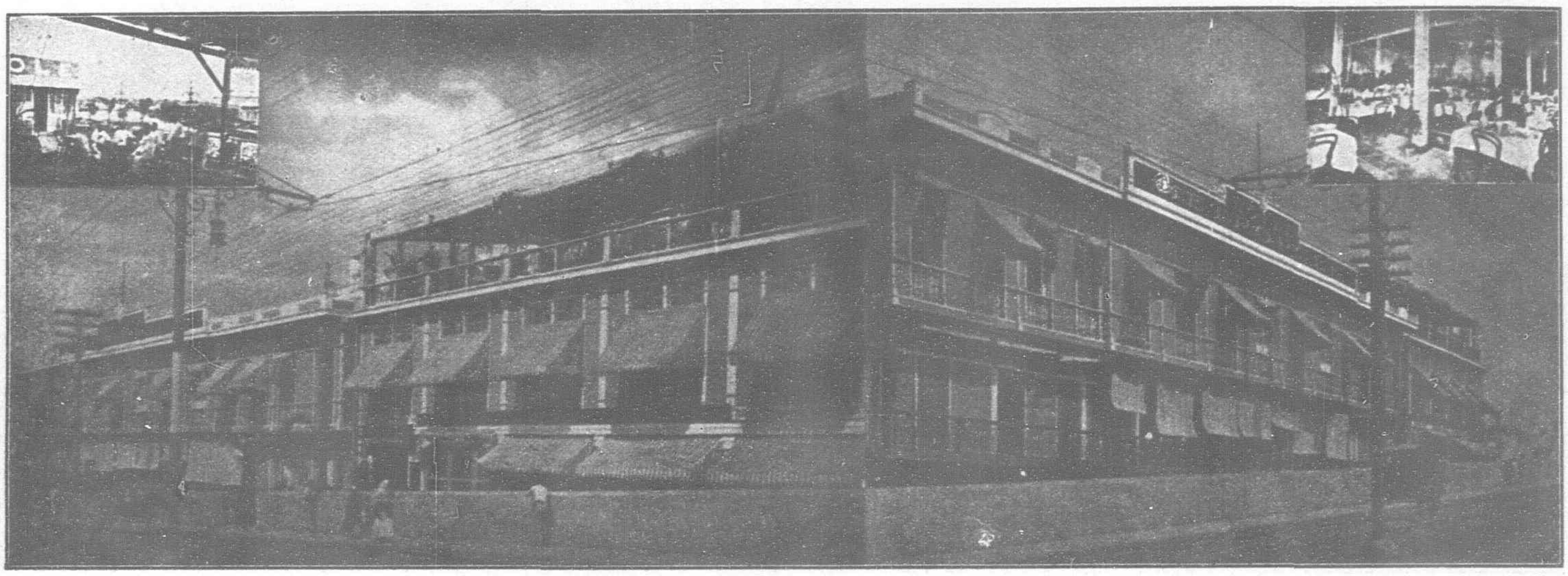

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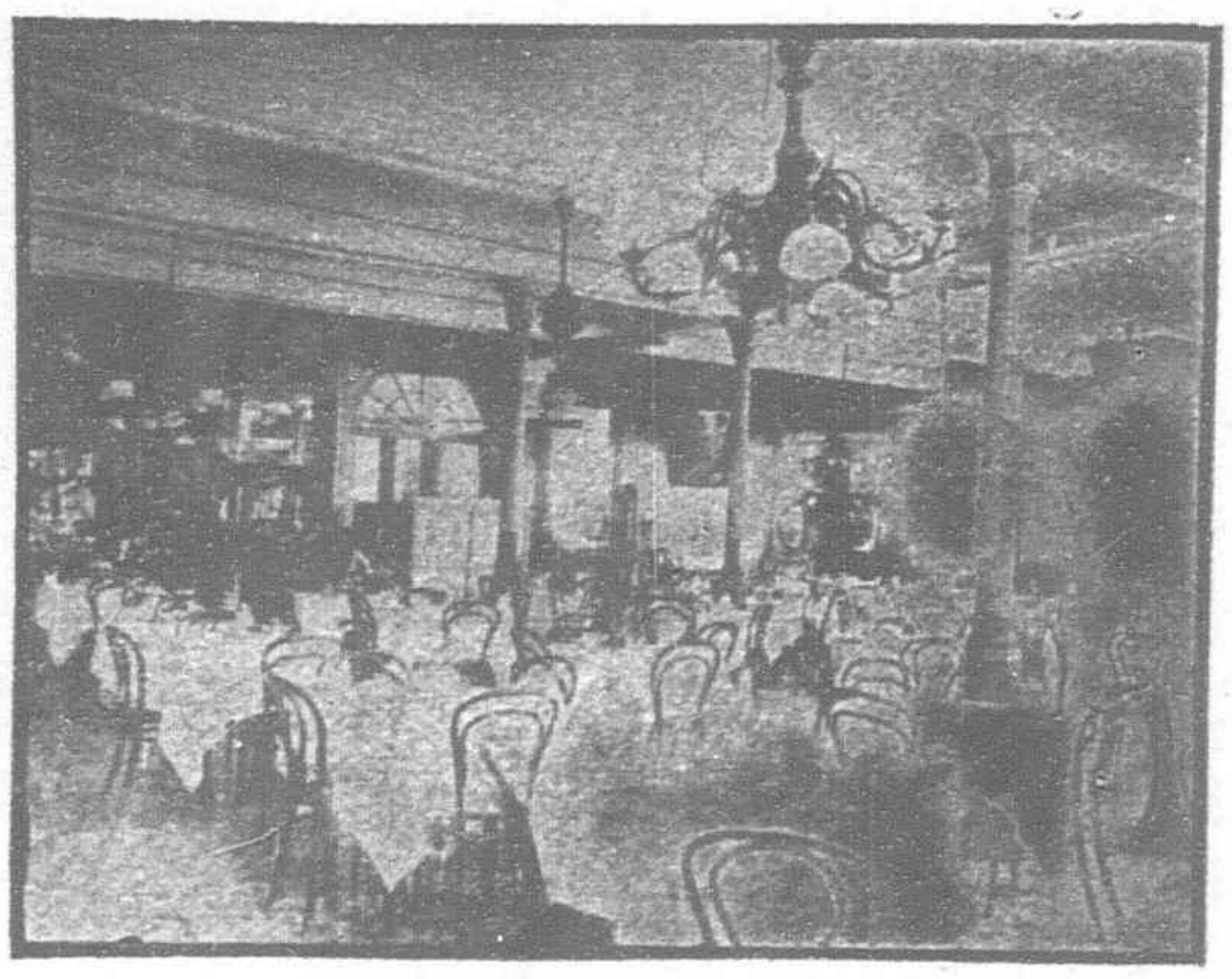

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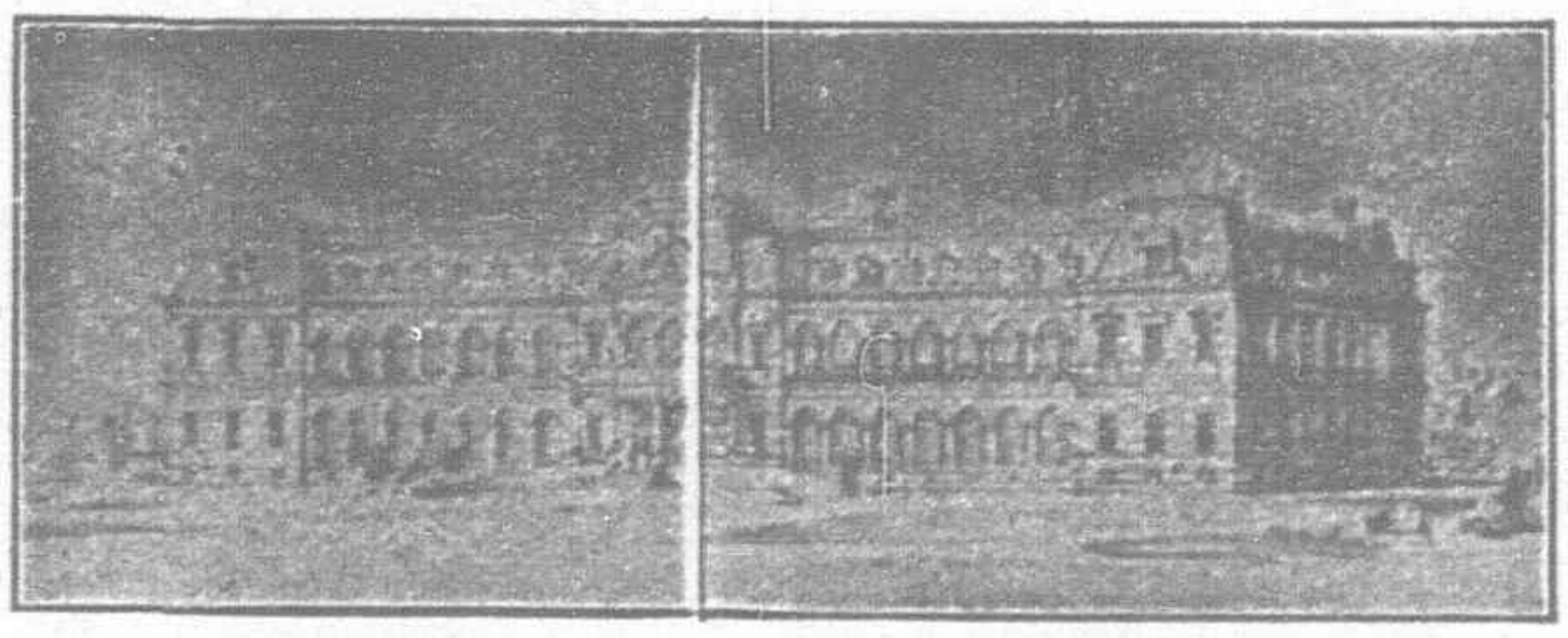

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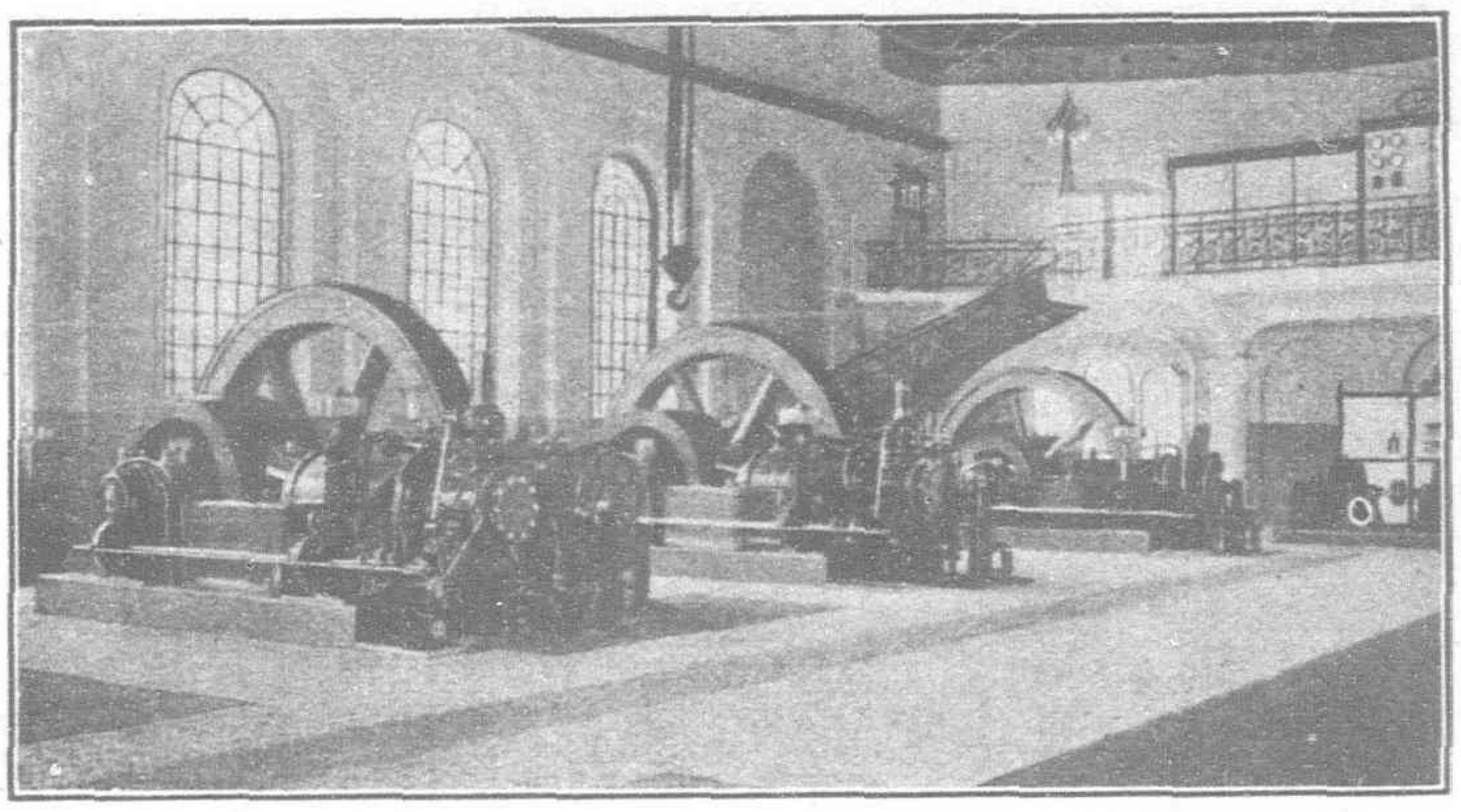

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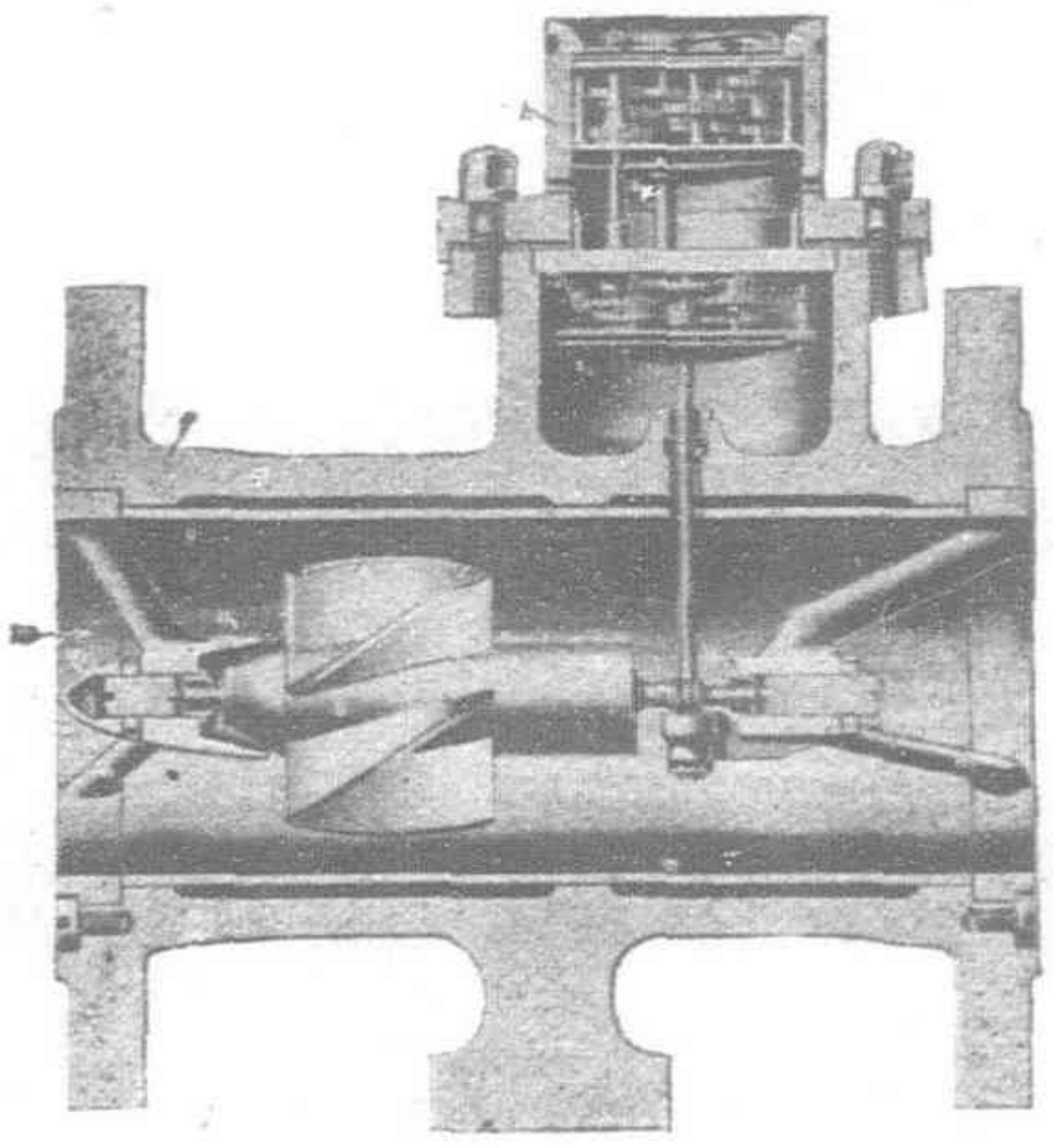

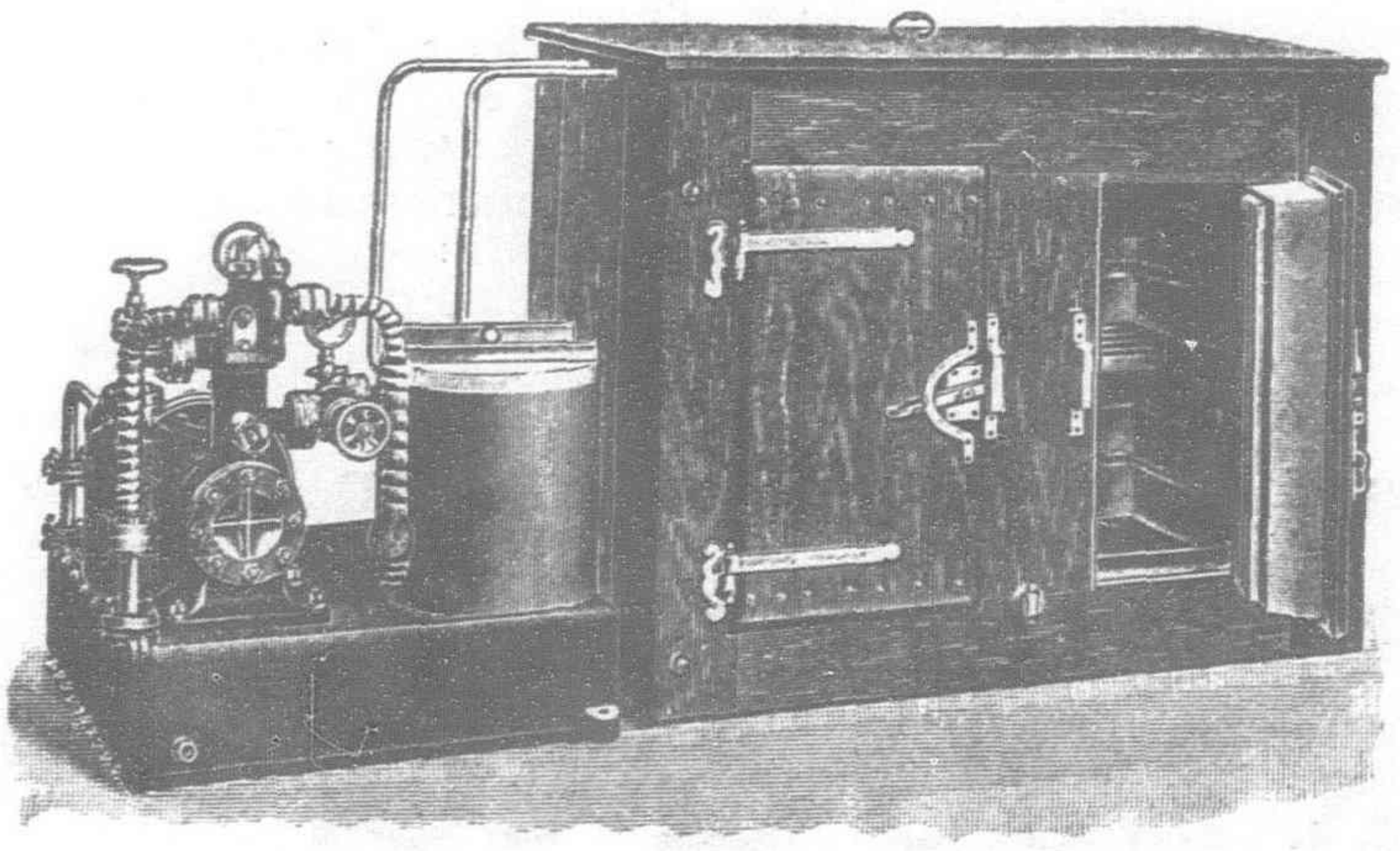

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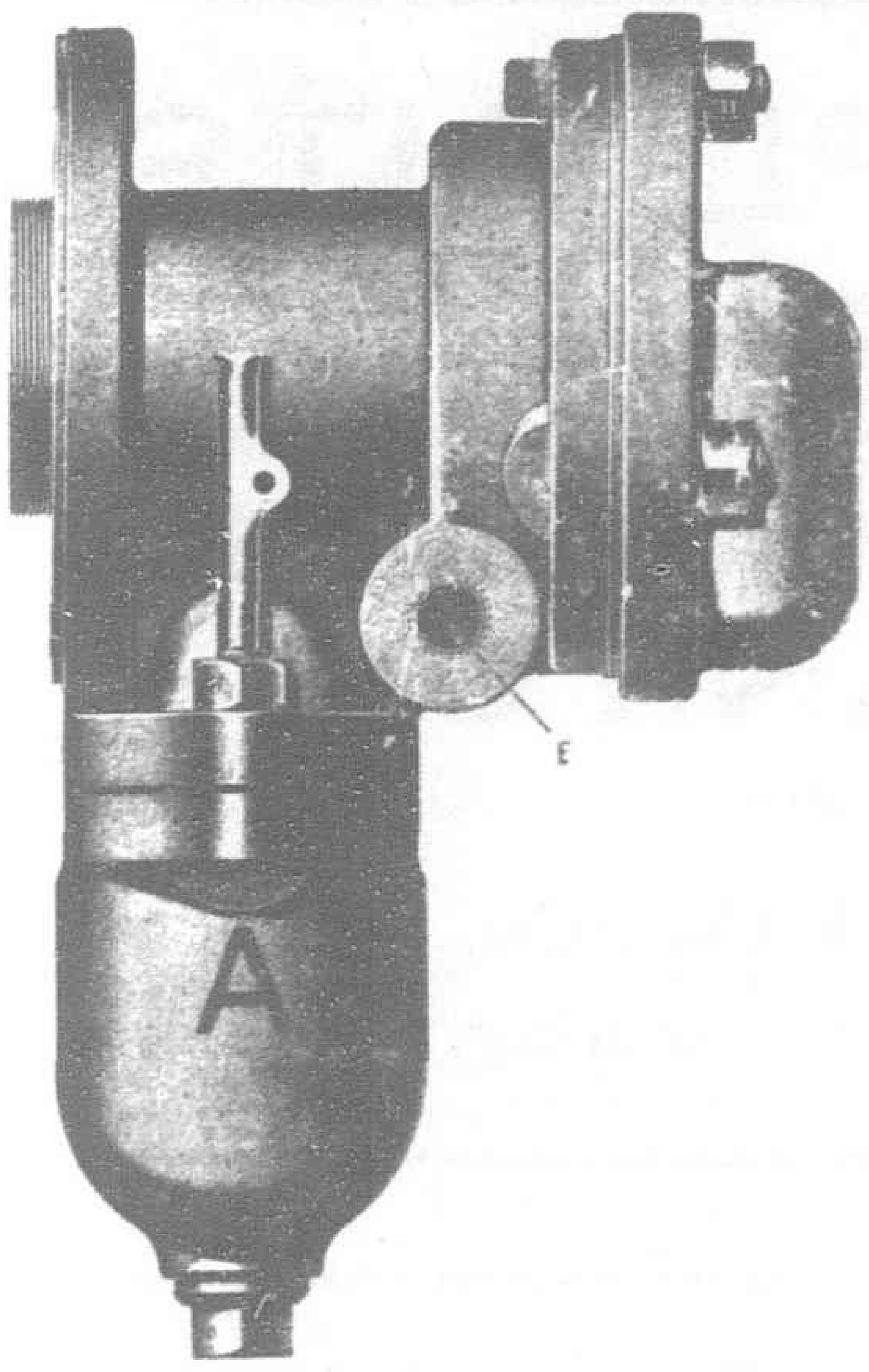

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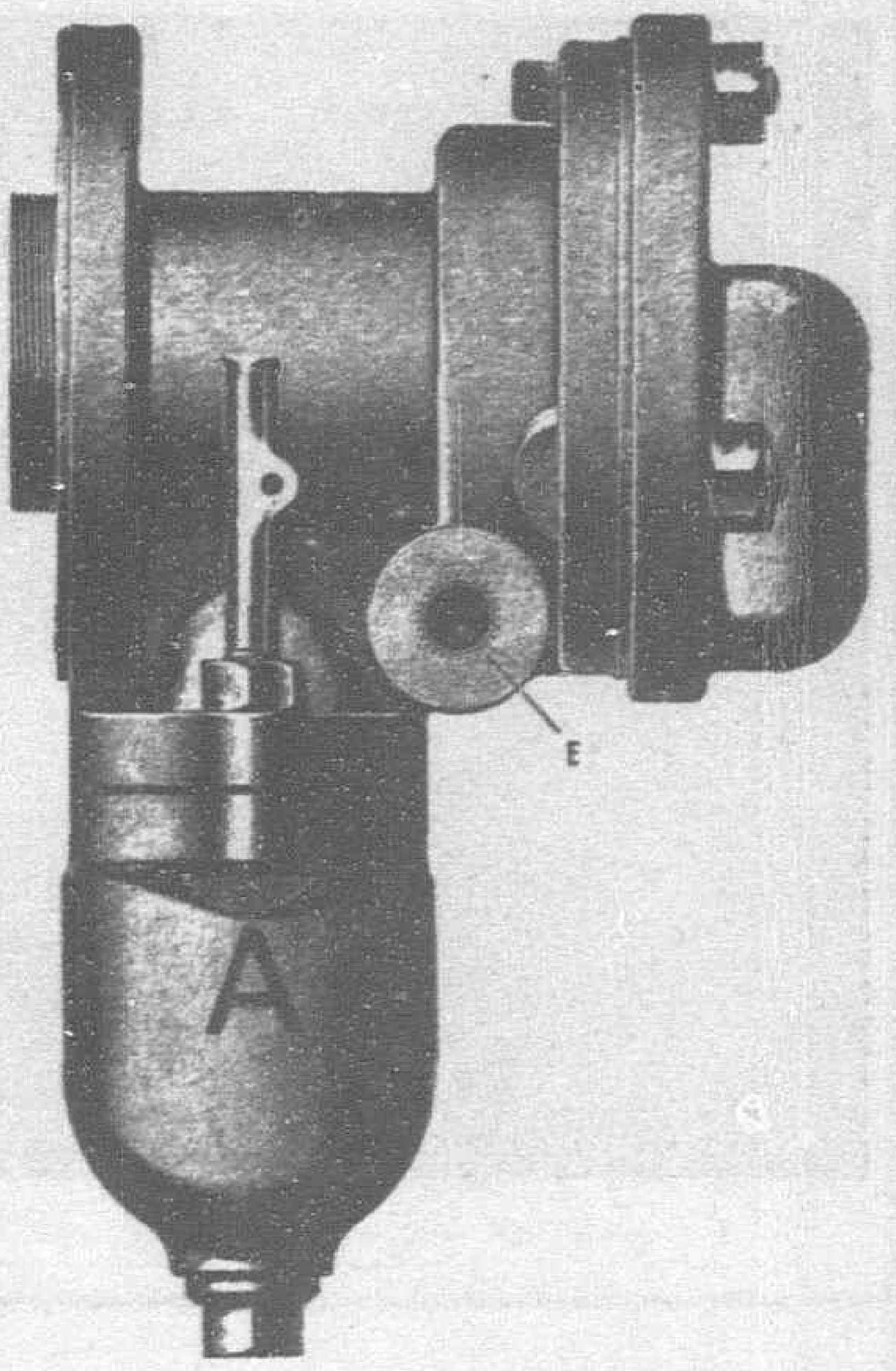

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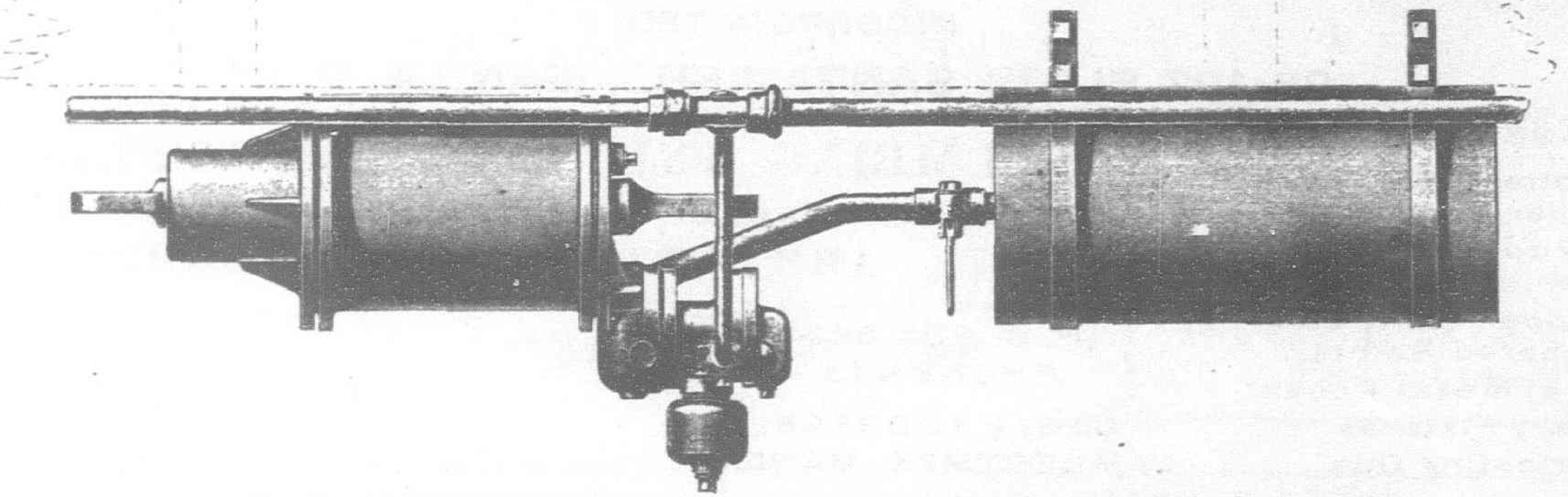

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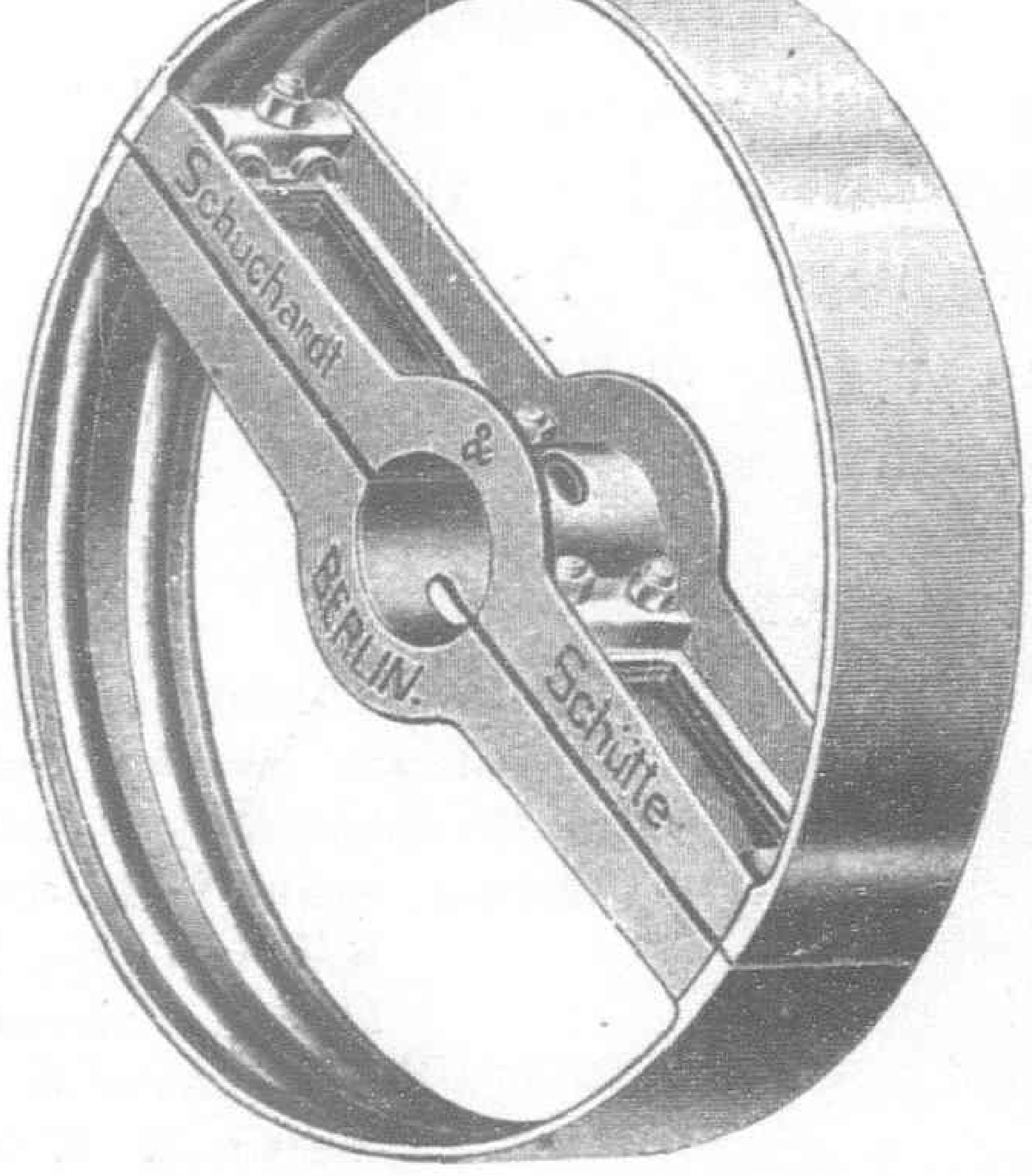

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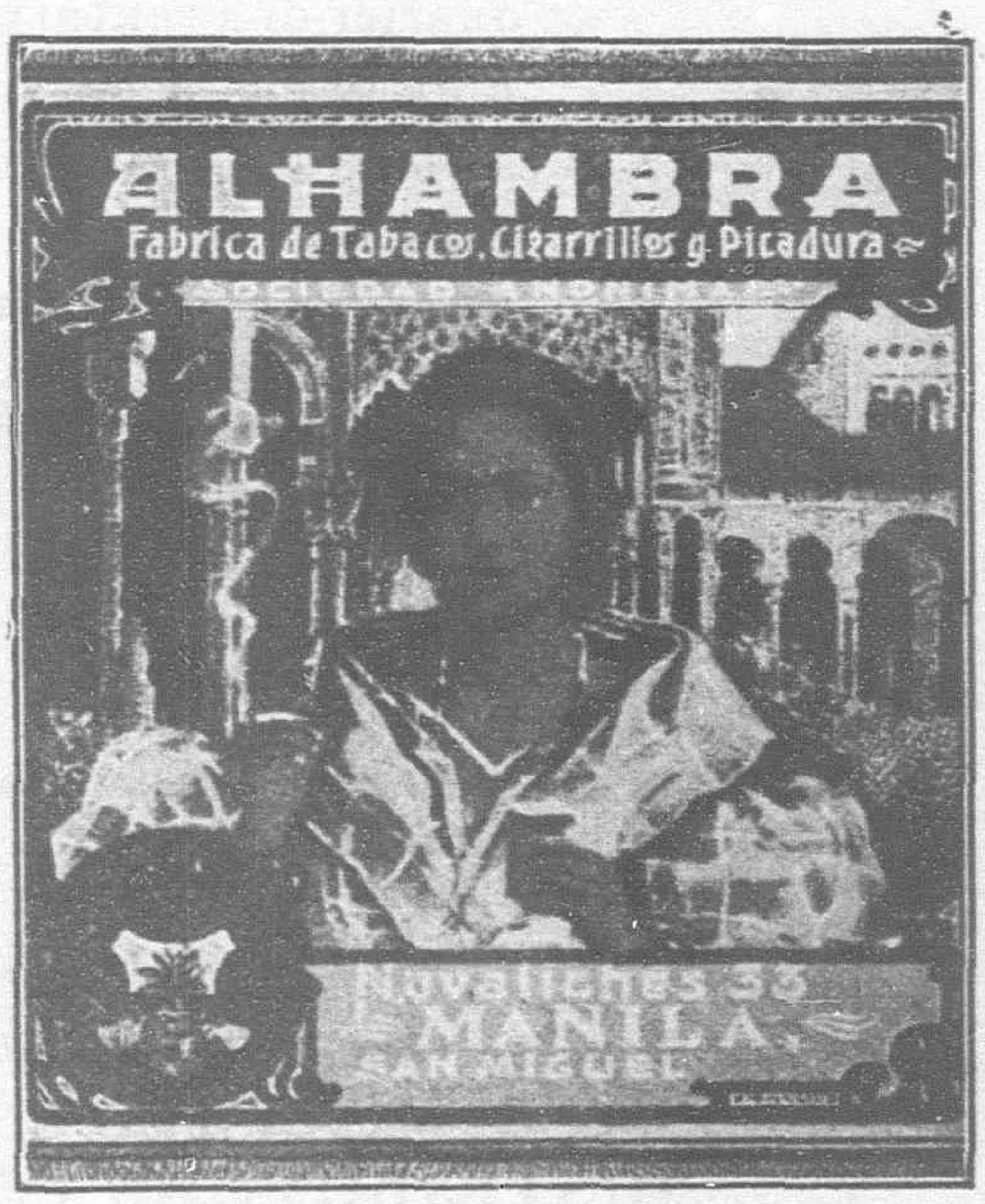

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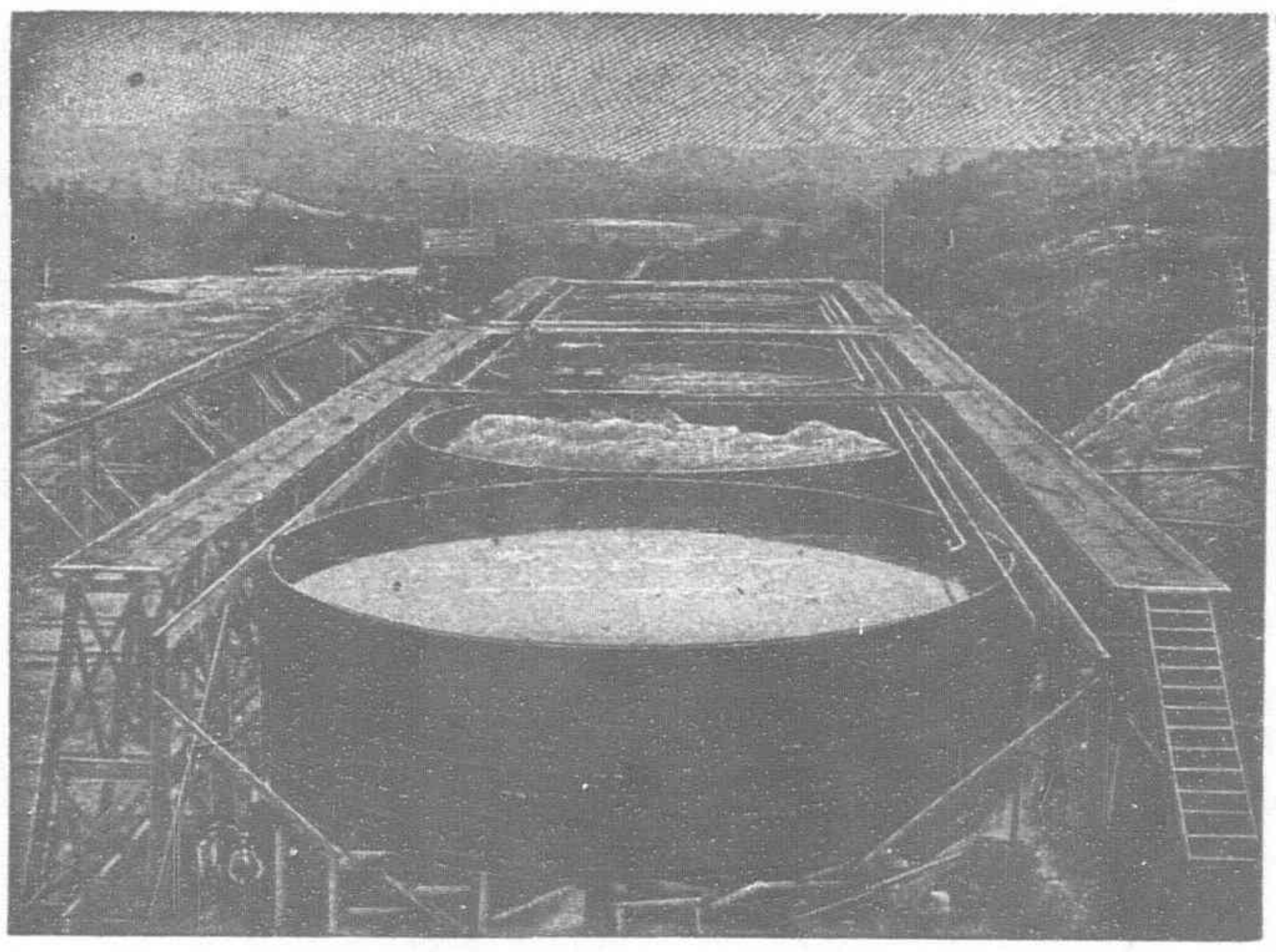

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DYNAMIC FLIGHT

By GEORGE GORDON BLACK

FOREWORD

The attitude of the daily papers in regard to the science of mechanical aviation is calculated to give the attentive reader the impression that human flight, as we understand it, is of comparatively recent birth. While this view is to a certain extent justified, it must not be thought that the present stage of development has been reached solely by the efforts of those daring men whose extraordinary feats are a matter of common report in the press. As a matter of fact most of our existing knowledge of the technique of free flight has been gradually accumulating for several generations, but, on account of certain material impediments, it has not hitherto been found possible to put the various rules and principles evolved into practical operation. The daily papers, however, are scarcely to be blamed for their lack of attention to the efforts of the pioneers. A series of disasters such as has marked the history of aerial flight was not calculated to promote enthusiasm in the subject and, indeed, it became the custom finally to regard the early experimenters as somewhat wanting in mental balance. Fortunately that feeling has now passed away—may we hope for ever. Visual evidence is a difficult thing to combat and, though many are still looking for a sign of the practical utility of the aeroplane, such feats are being recorded every day in increasing numbers as to justify us in assuming that the very near future will see the air as an important—nay, the most important of all—means of transport. The doubters I would ask to bear in mind that at the moment we are undergoing a stage of development. Man has to learn to walk and birds to fly. It took years to bring the bicycle, the locomotive, the steamship, and the motor car to their present degree of perfection, and so must the aeroplane go through the same progressive stages before it finally emerges in a commercially successful state. How many of these stages we have passed through and how many we have yet remaining to cope with would be difficult to say at the moment.

In considering the great question of the navigation of the air, therefore, let due credit be given not only to those great men who are now making history but also to those dead pioneers who not only devoted their entire lives to the study of the subject but, in many cases, paid also the toll that all great engineering feats inevitably exact.

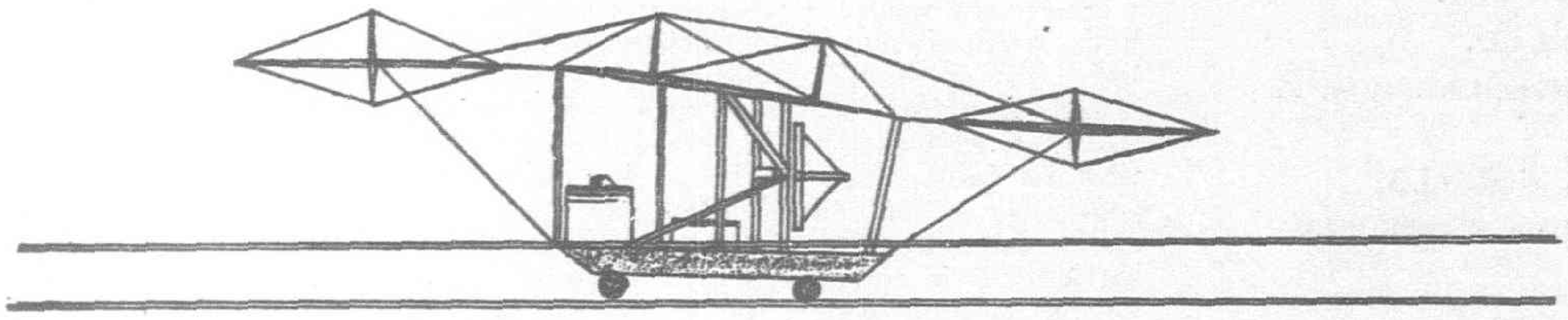
PART I.—HISTORICAL

> *"Soon shall thine arm, unconquered steam, afar*
> *Draw the slow waggon, or impel the rapid car;*
> *Or on wide waving wings expanded bear*
> *The flying chariot through the fields of air."*
> —*Darwin.*

There can be no question that the subject of human flight—with its, to them, suggestion of the supernatural—had an extaordinary interest for the ancients. History, right back to the earliest days and even in mythology, teems with references to impossible flying men and still more impossible flying machines.

In dealing with the historical aspect of aerial navigation, however, it is obviously outside the scope of a practical journal such as THE FAR EASTERN REVIEW to describe the machines in question, for the most casual glance at such illustrations of them as exist is sufficient to convince one of their impracticability. While a few certainly show evidence of careful thought, each and all are characterized by an entire disregard of the most elementary principles of the scientific side of aviation and may, in consequence, be relegated to the regions of absurdity.

Leonardo da Vinci, who was born in 1452 and died in 1519, was the first human being of whom we have any record who gave the subject any reasonable and rational thought. Da Vinci—whose name is familiar to all as a painter and sculptor—devoted an extraordinary amount of his time to the study of anatomy, and it was mainly through this study that his attention was drawn to the possibilities of human flight. His particular inclinations leant towards a machine of the "flapping wing" type and eventually he evolved a design which showed that his knowledge of aeronautics was profound. No machine was, however (so far as history records), actually built by him.



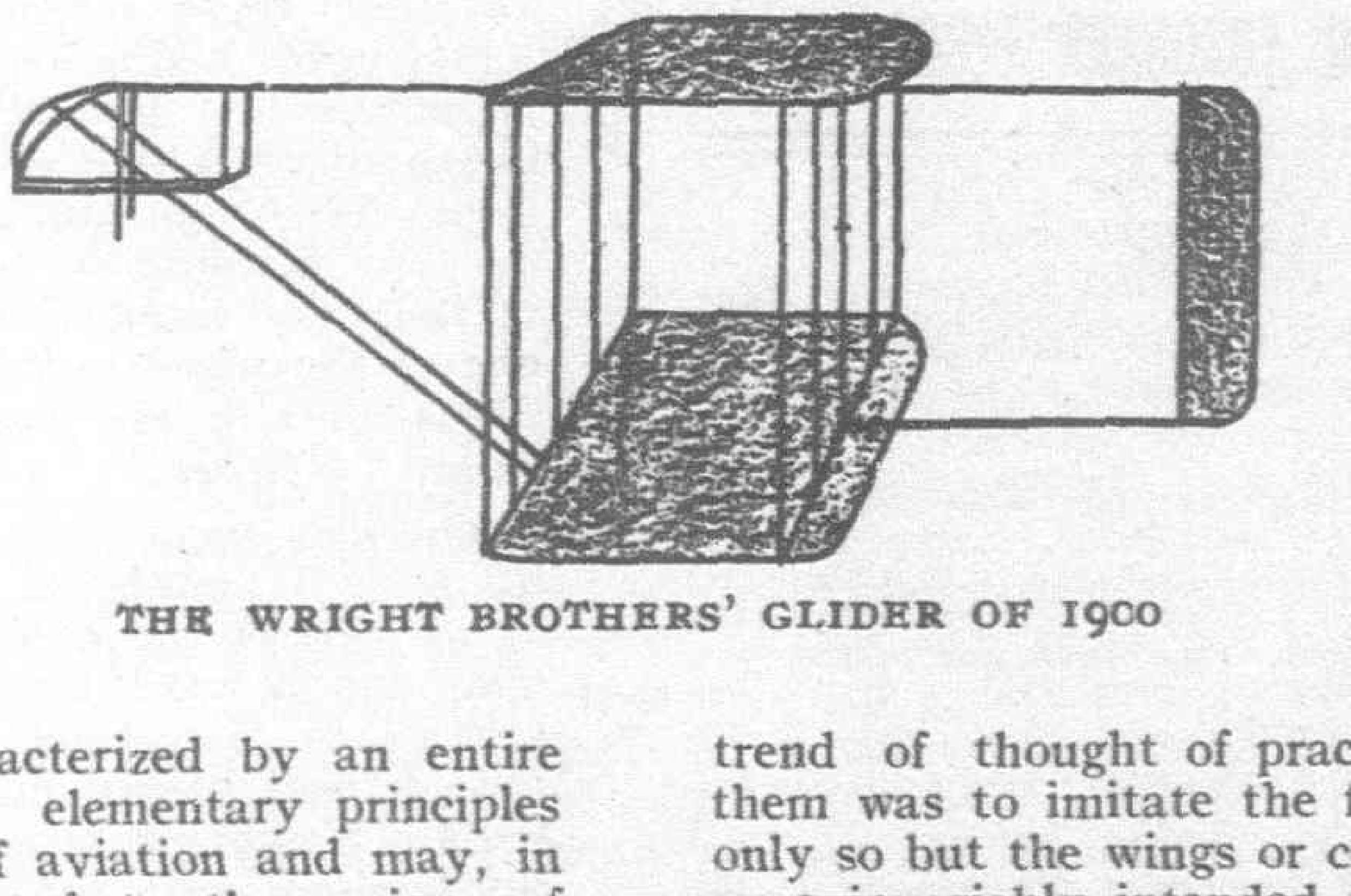
SIR HIRAM MAXIM'S AEROPLANE OF 1893

Da Vinci's manuscript constitutes a most clever exposition of the subject considered even in the light of present day experience. That he thoroughly understood the relation between the centre of pressure and the centre of gravity cannot be disputed, while his notes on equilibrium and stability are equally well thought out.

The series of disasters that are recorded from da Vinci's time until the beginning of the last century are mainly concerned with such devices as the great artist suggested, but so very unfortunate were they in their results that experimenters—that is to say those who lived to tell the tale—got disheartened and gradually acquired the conviction that man was not intended to fly at all.

In scanning the records of the inventors to whom I refer it is a noticeable fact that the trend of thought of practically every one of them was to imitate the flight of birds. Not only so but the wings or corresponding devices were invariably intended to be worked by the muscular energy of the pilot. The necessity for a prime mover does not appear to have been considered, possibly because no data was available to show the relation of power required to weight and supporting surface. In the light of present day knowledge it is not, therefore, to be wondered at that the flapping wing type of flying machine was a disheartening thing to experiment with.

About 1809 a new figure sprang up in the English aeronautical world in the person of Sir George Cayley. Sir George went to work in what was then an entirely original manner.



THE WRIGHT BROTHERS' GLIDER OF 1900

(Continued on page 420.)

THE FAR EASTERN REVIEW

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MANILA, SHANGHAI, AND YOKOHAMA, FEBRUARY, 1910

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SOME HONGKONG BANK REMINISCENCES

Among the interesting speeches made at the Third Annual Dinner of the Hongkong and Shanghai Banking Corporation was that of Sir Thos. Sutherland, G.C.M.G., who reviewed the early history of this prosperous institution and his own connection with its organization. In the course of his address he said:

"Only yesterday I took from a drawerin my office a copy of the original prospectus ofthe Hongkong and Shanghai Banking Company, and I find my name inscribed in that prospectus as its first deputy chairman. I beg to add, moreover—I trust you will forgive the egotism—that, without the assistance and without the co-operation of any person at the moment, I wrote that prospectus with my own hand, and but for that little historical fact in all probability the Hongkong and Shanghai Banking Corporation would not have come into existence. (Loud cheers.) The relation of that little history may very shortly be told, and it may be an arrangement to those younger members of our company who are about to start out in life, with, no doubt, greater advantages than I ever enjoyed, who when they wish to start a new bank for themselves know exactly how to set about it. (Laughter.) I happened to be in the beginning of the year 1864 a passenger on a small P. & O. steamer that was then making the voyage from Hongkong to Swatow, Amoy, and Foochow. Her name was Manila, and her speed was not of an excessive character, in reference, at all events, to these modern times. I believe she was able to accomplish something like a speed of eight knots or thereabouts, under the most favorable circumstances—(laughter)—and, therefore, within even a short voyage like that, gave plenty of opportunity for reflection, for reading, and for improving one's mind generally, as, of course, all young men must endeavour to do. Well, there are two outstanding features in connection with that memorable voyage of mine which rest in my recollection most keenly even to the present day. The first of these is one which I am sure you will never anticipate, and that is that I tried, with all the skill and power I could possibly use, to induce the Chinese cook of that vessel to understand what was meant by a *diner à la Russe*, then an almost unknown combination in the Far East, and I regret to say that my efforts were unsuccessful in that respect. But the other recollection, which is paramount, is that there were on board that ship a number of copies of 'Blackwood's Magazine' which contained certain articles on the subject of banking, and especially on the highly meritorious character of Scottish banking as compared with any other kind of banking in any other part of the world. (Cheers.) And I absorbed these articles; they fascinated me. I had never had a banking account in my life. (Laughter.) I had only an account with the Compradore, which was generally overdrawn—(loud cheers and laughter); but it appeared to me that, if a suitable opportunity occurred, one of the very simplest things in the world and one of the wisest would be to start a bank in China more or less founded upon Scottish principles. (Cheers.)

The idea must have lain latent in my mind for several months or perhaps for longer, but at all events the crisis arrived in this shape. One day a mail steamer called the Ottawa arrived in Hongkong commanded by a man who is well known in China, a Captain Eastleigh. I went on board, as usual, to transact my business with the captain, and after I had heard all he had to say he invited me to receive in his cabin a private communication of a most momentous character. This was to inform me that the good people in Bombay had recently started a Royal Bank of China, that they had appropriated to themselves two-thirds or three-fourths of the share capital, but that they were going to send an ambassador on to China immediately in order to distribute the one-fourth or one-third, their remaining capital, to create a Board of Directors and to earn all the profits out of the local community throughout China. My friend Capt. Eastleigh said this was a golden opportunity for me, that I might obtain some of those shares if I only paid proper respect to the expected ambassador, that I might even hope at some time or other to arrive at the position of a Director of the Royal Bank of China. Well, gentlemen, I reflected a good deal on the subject. I thought to myself that if the people in China were so unpatriotic, were so lacking in public spirit that they would submit to a Bombay enterprise coming along in this undignified position—I thought they would deserve whatever fate might befall them. But the result of my cogitation was that, inasmuch as I knew that we had in China many thriving and prosperous insurance companies founded upon the basic principle of co-operation among ourselves, I thought we ought to endeavour to create a bank of our own on the same principles, and that very night I wrote the prospectus in question as it stands now in the archives of the Hongkong and Shanghai Bank. (Cheers.) The capital was only five millions of dollars, a highly modest sum when we think of the position of the Bank to-day. (Cheers.) I took the prospectus next day to my friend Mr. Pollard, who was at that time the most eminent counsel in Hongkong, and I said to him, "You may make a business of this." He saw it in a glance, he saw a fee of ten thousand dollars immediately—(laughter)—and he took the prospectus round to all the leading firms in Hongkong, and with the exception of the firm of Jardine, Matheson and Co., every firm of repute and distinction at that time in China put their names down as members of the provisional committee of this Bank with its five million dollars of capital. The prospectus was sent out with the names of the provisional committee. Within less than a week the whole of the capital that we could possibly allot to Hongkong was taken up and stood at a considerable premium. The ambassador from the Royal Bank of China arrived in due course a fortnight or three weeks afterward. His name, I recollect, was Mr. Noel Porter. He could not get anybody to take a single share in his capital; he could not discover a possible Director anywhere, and I need hardly tell you that within an incredibly short space of time the Royal Bank of China was wound up in Bombay with somewhat unfortunate if not ignominious results. That is really the history of the genesis of this great undertaking. I felt perfectly confident that in due time we should arrive at great results, even although we began in a somewhat modest capacity. Those results we witness here to-day, those results we have been conscious of now for many years, and they are due to some extent no doubt to fortuitous conditions which favoured the Bank at its commencement."

The above is one of the most valuable contributions to the financial history of the Far East and serves to demonstrate the possibilities that lie in small beginnings. Sir Thomas Sutherland may well be proud of the structure, the conception of which stands to his credit as well as the expedition with which he perfected the organization that now stands as a monument to British enterprise in the Far East.

BAMBOO PAPER

The manufacture of paper from bamboo pulp has been successfully demonstrated in Formosa where the Mitsu Bishi Paper Mill Company is installing a plant with a capacity of about 300 tons of paper a month. The experiments were carried out at the scientific station at Kobe. According to a report submitted by Consul Reat of Tamsui this company has secured a concession of 8,000 acres of bamboo forest near Kagui and makes the following reference to the bamboo paper industry and the advances made by science to bring it to a state of perfection:

"The making of paper from bamboo is no recent discovery. For generations the Chinese have carried on this industry in their homes, but their methods are exceedingly primitive—no chemicals entering into their process. The Chinese use only bamboo shoots, for the evident reason that the shoots can be more readily worked up.

"The new company will use all kinds of bamboo, young and old, but particularly a variety called 'kei chiku,' of which there is an unlimited quantity. The question of the supply of raw material will ever puzzle the company, for the growth of bamboo is very rapid. It verily grows inches in a night.

"The experiments so far have been made by mixing bamboo pulp and wood pulp in varying proportions, according to the quality of paper desired. But it is intended later to make paper entirely from bamboo pulp; the only difficulty standing in the way of that process now is that the cost of an entire bamboo paper is more than the cost of wood-pulp paper. It is expected that all the machinery of this company will be installed and the plant will be in full operation by June, 1910. The process employed will be a modified sulphite, specially prepared by the company from bamboo. There are eight different stages in the manufacture: (1) The preparation of the bamboo by chopping into small pieces from one to two inches in sizes; (2) cooking or digesting in a digestor with sulphite or calcium; (3) washing with water; (4) bleaching with powder or electricity and washing again; (5) drawn through a machine to press into the form of web; (6) drying by steaming; (7) rolled by winding machine, or cut into sheets.

"The pulp will be shipped to Japan in the form of rolls or sheets, where it will be manufactured into two grades of paper—news and book. On the Formosan pulp factory, and on the mills at Kobe, where the finished bamboo product will come forth, much interest will be centered by the great paper industries of the world."

The success of this enterprise will serve to open up one of the most extensive industries in the Far East and make for a solution of the problem of maintaining an adequate supply of material to meet the increasing demand for paper throughout the world.

"HALLEY'S COMET"

The following is issued as an appendix to a bulletin issued by the Rev. George M. Zwack, S. J., secretary of the Philippine Bureau, under the title "The Return of Halley's Comet and Popular Apprehensions," and contains some data regarding Halley's Comet.

" 'Halley's comet' received its name in honor of the famous English astronomer Edmund Halley (1656-1742), who, at the time of its appearance in 1682, calculated its orbit and, after establishing its identity with the comets of 1531 and 1607, pronounced it to be a periodic comet, predicting its return for 1759, or the end of 1758. The prediction came true. The comet passed perihelion on March 13, 1759, only thirty-two days earlier than had been computed by the French mathematician and astronomer Clairaut. Though Halley had died in 1742, posterity did not forget his claim on the comet, which was thenceforth called 'Halley's comet.'

"Two English astronomers of the present time, Messrs. Cowell and Crommelin, have, by patient research and laborious calculations, traced the history of our comet as far back as the years 87 B. C. For every one of the twenty-five returns postulated by the period of the comet since 87 B. C., they found historical proofs. Their dates are as follows:

Year.	Perihelion Passage.
87 B. C	Aug. 15
12 B. C	Oct. 8
66 A. D	Jan. 26
141 A. D	Mar. 25
218 A. D	Apr. 6
295 A. D	Apr. 7
373 A. D	Nov. 7
451 A. D	July 3
530 A. D	Nov. 15
607 A. D	Mar. 2
684 A. D	Nov. 26
760 A. D	June 15
837 A. D	Feb. 25
912 A. D	July 19
989 A. D	Oct. 9
1066 A. D	Mar. 27
1145 A. D	Apr. 6
1222 A. D	Sept. 10
1301 A. D	Oct. 23
1378 A. D	Nov. 9
1456 A. D	June 8
1531 A. D	Aug. 26
1607 A. D	Oct. 27
1682 A. D	Sept. 15
1759 A. D	Mar. 13
1835 A. D	Nov. 16
1910 A. D	Apr. 19

"The present appearance is, therefore, the twenty-seventh of which we have certain knowledge. There can be no doubt that the history of the comet could be traced much farther back by means of the cuneiform inscriptions of Assyria, but this difficult piece of work seems to have not yet been attempted.

"While the mean period of Halley's comet as given in astronomical books is 76.37 years, the shortest interval between two successive perihelion passages has hitherto been 74.88 years (1607-1682) and the longest 79.37 years (451-530). All records will, however, be broken by the present visit of the comet. If it passes perihelion on April 19, 1910, only 74 years and 155 days will have elapsed since its passage in 1835! These inequalities are due to the perturbations in the comet's motion caused by the attraction of the planets, especially of Jupiter and Saturn.

"At *perihelion* (point of least distance from the sun) Halley's comet is, on the average, only 54,000,000 miles from the center of the sun, while at *aphelion* (point of greatest distance) it is 35.4 times as far as the mean distance between earth and sun, or, in round figures, 3,288,000,000 miles, which is about 496.4 million miles—or more than five times the distance between sun and earth—beyond the orbit of Neptune, the farthest *known* planet.

"At its present return, the comet was first discovered by Doctor Wolf, director of the astrophysical observatory on the Königstuhl near Heidelberg, Germany. Two photographic plates exposed to the computed place of the comet in the morning of September 11, 1909, showed the visitor. On the following day Lick Observatory, California, and Helwan Observatory, Egypt, likewise obtained photographs of the comet, which was then too faint an object to be visible, even in the largest telescopes. On September 15, however, it was for the first time observed visually with the 40-inch refractor of Yerkes Observatory, Wisconsin, by Professor Burnham, as a very faint object. Since then it has slowly grown brighter, at times more rapidly than was anticipated.

"Several authorities were of the opinion that the comet could be seen by means of field-glasses about the beginning of February, if not earlier. This appears to be not the case. At Manila Observatory the comet was first seen with the 19-inch equatorial on November 25, 1909. It was again picked up in the same telescope in the evening of January 29 and 30. On the latter occasion it was a relatively easy object with the 5-inch finder attached to the larger instrument, but appeared to be below tenth magnitude.

"In view of these facts, the reader will probably not be too much surprised if, on reading the following statements concerning the phenomena to be expected, he finds only vague language. Astronomical positions are expected to be given at least down to minutes of arc, and the moment of a celestial occurrence to fractions of a minute of time. He may remember the story of the discovery of Neptune. Though this planet had never been seen *consciously* by human eyes (it had indeed been observed repeatedly, but always been mistaken for a star of ninth magnitude), its existence was deduced from the small differences between the computed and observed places of the planet Uranus. From these perturbations the French mathematician Leverrier calculated the whereabouts of an unknown disturbing planet so accurately that Galle, at Berlin, found the latter on the night of September 23, 1846, within half an hour after commencing the search and only 51′ (a little more than 1.5 times the angular diameter of the sun) from the indicated place. But the same methods and the same genius applied to the computation of cometary motion are far from giving equally good results. Suffice it to mention only that the position of the center of mass of a comet can not be determined as accurately as that of a planet, and of the mass of a comet we know practically nothing. Of a few of them, such as have come sufficiently close to the earth, we know a limit which their mass can not reach, but how indefinitely they may be below it, who can tell? If these facts are considered, the wonder is not that discrepancies exist, but that they are not vastly greater, especially if we bear in mind that in the case of Halley's comet the difference between the longest known period of revolution and the present shortest one is only twenty days short of five full years.

"After this apology for astronomical calculations (and incidentally for ourselves!) we venture to make the following statements:

1. The comet will probably reach eighth magnitude about the middle of February. A good pair of field glasses ought then to show it in the western sky, approximately 44° east and 21° north of the sun's apparent place. As the comet will set about three hours after the sun, the advent of darkness may be awaited.

2. During the first third of March it may become possible to see the comet with the naked eye. But this can not last very long, since on March 16 it will set about half an hour after the sun, being some 5.5° north of it; whence it will be lost in the glow, unless very bright.

3. About March 23 sun and comet will be in superior conjunction, that is, as seen from the earth, both bodies will have the same right ascension, the comet being beyond the sun and about 5.5° north of it. Of course, there will be no possibility of seeing the former, owing to the glare of the latter.

4. Toward the middle of April the comet may be looked for in the morning sky, where it will rise before the sun, being 2.5° south of the point of sunrise on April 15. It ought to be an easy object for the unaided eye. It will be noticed that, while in the west the comet appeared to plunge headlong toward the horizon, it is now backing into view, as the tail is always pointing away from the sun. For some five weeks the difference between the rising of the comet and sunrise will increase; but six days before inferior conjunction on May 19, it will again decrease until the comet is once more lost to view in the splendor of the sun shortly before conjunction.

5. According to the latest information on hand, the exact time of perihelion passage, or closest approach of the comet to the sun, is April 19.65 Greenwich time, which, in the ordinary way of counting dates, is 11 o'clock and 36 minutes a. m. of April 20, Insular time (one hundred and twentieth meridian east of Greenwich).

6. After perihelion the comet will approach the earth very rapidly and, therefore, quickly increase in size until the time of inferior conjunction with the sun and shortest distance from the earth. At this time the *apparent* motion of the comet will be so swift that the latter will seem to pass through more than 45° in right ascension in the short space of four days.

7. Earth and comet will be in heliocentric conjunction at 10 a. m. of May 19 (Insular time). Messrs. Cowell and Crommelin, of Greenwich Observatory, have calculated that the comet, as seen from the earth, will pass across the sun's disk nearly centrally, entering from the west and accomplishing the transit in about one hour. Though the sun will then be high in heaven in this part of the world, there is very little hope that the comet can actually be seen on the sun's disk. According to all that we know of the nature of comets, even their nuclei are not dense enough to intercept the sun's rays sufficiently to reveal the comet's presence between the sun and the eye of the terrestrial onlooker.

8. If the present appearance of Halley's comet rivals the former, the comet will be a magnificent object. As to the probable length of its tail, nothing can be stated. The greatest length on record was 60° (in 1456); that is, two-thirds of the distance from the horizon to the zenith. How close to the sun the comet will be visible is likewise unknown. The great

comet of 1882, for instance, was actually first discovered on the day of its perihelion passage, when only 2° from the sun.

9. While *before* conjunction the comet preceded the sun in the morning, it will follow the same *after* this event and, therefore, may again be observed in the evening. But it will rise rapidly in the sky, tail foremost, and fade away very quickly, since it now not only recedes from the sun, but also from the earth, comet and earth moving in almost opposite directions. Before the middle of June it will probably be lost to the naked eye; at the end of June field glasses will no longer show it; and at the end of July it will be invisible even in the largest telescopes. When, after about seventy-six years, Halley's comet will again appear to the eye of man, neither the writer of these lines, nor the vast majority of those for whom they are written, will gaze upon its weird but harmless beauty—for us the end of the visible world will have come."

AMERICAN GOLD DREDGING PRACTICE CHALLENGED

The following correspondence, subscribed to by Mr. W. H. Cutten, a British expert on matters appertaining to gold dredges and dredging, appears in the *Mining Journal* of January 5th, which will be of the greatest interest to mining men in the Far East and especially those who are interested in the rich placer properties now being developed in the Philippines and elsewhere. The letter follows:

"To the Editor of *The Mining Journal:*

"SIR,—I have received a copy of the Risdon Ironworks latest catalogue of dredging machinery, and it is of considerable interest to me. I notice that the Risdon company claim to have purchased from Mr. Postlethwaite certain patent rights for the various working parts of gold dredges, but I fail to see what value these rights may have, seeing that all the inventions claimed (with the exception of the tailings stacker) were in use in New Zealand for fully ten years before Mr. Postlethwaite left that country. The tailings stacker was not only in use in New Zealand, but it had been made by Mr. Postlethwaite's firm to my designs at least twelve months before he left for San Francisco. The tailings stacker was my own invention, and was first used by myself.

"In the Risdon catalogue figures are given comparing the working of one of their dredges with that of an Eastern built American dredge (presumably a Bucyrus), and curiously enough these figures more than confirm my opinion of the superiority of the open over the close connected bucket, as described in my article in your journal of November 20. The two dredges mentioned have each 5 cubic ft. buckets, dredging to a depth of 30 ft. The gravel is similar and also the bottom in each case, consequently the comparison is fair. The Eastern built dredge with close connected buckets lifted 475,504 cubic yards for the twelve months' work, while the open bucket dredge lifted 517,989 yards for the same time, or just about 9 per cent. more gravel, although the former would probably be running 22 buckets per minute and the latter only 12. The lost time is 8.8 per cent. more. The repairs are 14.5 per cent. more. The power required is 50 per cent. more, and the average cost per cubic yard of gravel lifted is 24 per cent. more with the close connected bucket than with the open connected one. (Vide Risdon catalogue, pages 18 and 19.)

"In my article I conceded that the close connected would lift more than the open connected bucket in easy ground or loose gravel; but it appears from the Risdon company's figures that the ground must be exceptionally loose, for even with moderately easy ground the open buckets are far ahead.

"I understand that my figures have been questioned with regard to the comparison of the American with the English type of dredges, and it is stated that the Oroville dredges are working *in much rougher ground* than the New Zealand or Burma dredges, although so far no one has challenged my figures in print.

"It may interest sceptics to know that I spent two weeks on the Oroville, the Folsom, and the Yuba fields watching quite a number of the dredges working, and I never saw any ground that would compare in roughness with some that I have seen worked in Burma and personally worked in New Zealand, where it is not an uncommon thing to see a stone of over 2 tons weight come up on the stone hooks, or to see three to four stones coming up on the buckets at the same time between the bow and the top tumbler, and none of them less in size than a 200-lb. cement cask. I herewith enclose a photo of a stone lifted by a 4½-ft. bucket and photographed on the deck of the dredge in New Zealand. Many other such stones were lifted by the same dredge, but the interest taken in them flagged after the first half-dozen or so.

"As it appears that some dredging companies, under the advice of American experts, are still content to waste their shareholders' money by ordering American type dredges to work under unsuitable conditions, I should like to hear if any of your many readers could mention a single instance in either Russia, Africa, or South America where an American dredge is paying its way; for although I can hear of many failures, so far I have not heard of any success. Can anyone enlighten me?

"In my last letter, published in *The Mining Journal* on December 4, in reply to 'Kotuku,' I notice that the last paragraph but one, as printed, was unintelligible. It should read: 'Since "Kotuku" calls attention to the growing habit of English companies ordering their machines direct from the shipyard, a word may not be out of place. Gold dredging is a business which requires special knowledge and experience, and every dredge should be designed to suit the conditions under which it has to work, and so long as people order stock pattern machines and try to make the ground suit that machine, so long shall we have commercial failures."

We cannot say from experience that the claim made by Mr. Cutten is borne out in every respect, but we are certainly impressed with the great lack of interest taken by American dredge manufacturers in catering to foreign business. We do know that the only dredge used in the Philippines has not been a success and that the only successful work accomplished in the Philippine placer fields is to the credit of New Zealand dredges. We do not say that the American dredge brought out to the islands would not work satisfactorily if it were installed on ground to which it was adapted, but we have not heard of any attempt on the part of the manufacturer to repair the damage to the reputation to American practice in the Philippines by the presence of this unsuccessful dredge alongside the successful New Zealand machinery. If it be true that American manufacturers pay as little attention to the installation of their dredges in Russia, Africa or South America as they do in the Philippines, then we are inclined to the belief that Mr. Cutten has ample province for his challenge.

At the present time there are two New Zealand dredges operating in Paracale and orders have been placed for at least six more. The first New Zealand dredge was installed by the Paracale Gold Dredging Company, a New Zealand company. Before this company became interested its experts visited the ground, tested it thoroughly, and studied the character of the soil and the natural conditions of the country. Then they returned to New Zealand and put up a dredge suited to the work. This dredge was installed in due course and for over a year has been working continually and paying big dividends.

Now, during all this time there has not been an American dredge expert in the Philippine Islands representing an American manufacturer. They send their catalogs and seem prepared to carry on a mail order business. The one mail order referred to was filled some few years ago and the result was failure in Masbate. The same dredge is down in Paracale being tried out again, but so far without success.

During the last year paying placer ground covering an area approximately 50,000 acres has been prospected and probably one quarter of it is more or less tested. In this work the prospectors have had the steady cooperation of New Zealand experts and New Zealand capitalists stand ready to put in dredges and operate them on the most liberal terms. They will install a dredge, for instance, on any tested ground without expense to the prospector or owner of the ground and divide the net receipts with him. There is every indication that during the next year there will be 500 New Zealand dredges at work in the Philippines, and it will be due largely to the enterprise of New Zealanders, who have not attempted to dump their dredges in the islands whether adapted or not, but have studied every phase of placer mining and will not permit the installation of any of their dredges liable to prove a failure.

The challenge made by Mr. Cutten is one that must not remain unanswered if American dredging practice is to find favor abroad. The American manufacturer has always been satisfied to supply the home market, and when an order is placed from outside the United States it receives scant attention. And we take great pleasure in directing all dredge manufacturers' attention to the words of Mr. Cutten: "Gold dredging is a business which requires special knowledge and experience, and every dredge should be designed to suit the conditions under which it has to work, and so long as people order stock pattern machines and try to make the ground suit the machine, so long will we have commercial failures."

And we might add that the manufacturer, who permits his dredges to be installed indiscriminately as referred to above, will find that no matter how perfect his standard may be, he will suffer from the reputation that dredging failures are sure to establish.

THE MANILA CARNIVAL

The Philippine Carnival Association for 1910 proved the success anticipated as a handsome balance in the treasury gives evidence. The features of the year appear to have been the extensive industrial exhibits from almost every province in the Philippines and the marked interest taken by the Filipinos in the series of lectures on industrial topics that marked every afternoon of the week and especially those under the direction of the Bureau of Agriculture.

The atendance from the provinces had the desired effect of bringing the representatives of the different Filipino interests together and so wholesome has been this influence that already the organization of an Agricultural Society among the hacenderos has been effected and will, no doubt, result in the advancement of this important field of endeavor.

Much credit is due Director General Meehan and his able staff who overcame every obstacle to success and gained the co-operation of the insular government, the commercial community, and the Army and Navy, without which it would have been impossible to carry the project to the degree of success attained.

There is reason to believe that out of the carnival will grow a permanent yearly exposition of Philippine industries as the main feature, and a few days of fun and frolic thrown in. If this results the Philippine Carnival Association will have served a good purpose, and as the years pass we may look forward to a better understanding among the different peoples of the archipelago drawn together by mutual interest in the display of their handiwork and the discussion of subjects full of instruction and of benefit to all.

THE HON. CHARLES BURKE ELLIOTT, SECRETARY OF COMMERCE AND POLICE PHILIPPINE ISLANDS

The recent appointment of Justice Charles Burke Elliott, of the Philippines Supreme Court, to be a member of the Philippine Commission with the portfolio of Secretary of Commerce and Police, succeeding His Excellency, the Governor-General, in that capacity, has greatly strengthened the legal end of the Commission. Secretary Elliott is a jurist of national reputation and is widely known as an author of a number of authoritative legal works.

Secretary Elliott was born in Morgan County, Ohio, January 6th, 1861. He attended the Morgan County schools and later the Marietta College. He then took up his studies in the State University of Iowa from which institution he graduated with the degree of L.L. B. in 1881. Later, in 1895, the University conferred on him the degree of L.L. D. and in 1904 Marietta College honored him likewise. In 1889 the University of Minnesota conferred the degree of Ph. D.

In 1884 he married Miss Edith Winslow, of Muscatine, Iowa. After being admitted to the bar he practiced law in Minneapolis and was elected judge of the Municipal Court in 1890, which position he held until 1893 when he was appointed judge of the District Court, Fourth District, Minnesota, in which office he remained until 1904 when he was elevated to the Supreme Court of Minnesota. He remained in this capacity until he accepted the position as associate justice of the Philippine Supreme Court in August, 1909.

It might be said that this position was offered him several years ago, but he declined at the time to be later induced to reconsider in 1909, with the result that President Taft who was anxious to have the brilliant jurist identified with the Philippine administration, succeeded in inducing him to accept a career in the dependency. On February 10, 1910, his nomination as Secretary of Commerce and Police was approved by the Senate.

Secretary Elliott is a republican in politics. He was Professor of Corporation and International Law at the University of Minnesota from 1890 to 1897. He is a member of the International Bar Association, The American Bar Association, Society Comp. Legislation, International Society Comp. Jurisprudence and Political Science, Berlin and American Society of International Law. He is the author of "The United States and Northwestern Fisheries," 1887; "The Law of Private Corporations," 1900; "The Law of Public Corporations," 1898; "The Law of Insurance," 1902; "Minnesota Practice," 1900. He has also written many magazine articles of note on legal and other subjects besides delivering many addresses on similar subjects.

THE HON. NEWTON W. GILBERT, VICE-GOVERNOR OF THE PHILIPPINE ISLANDS

The Hon. Newton W. Gilbert, Secretary of Public Instruction, who was recently appointed Vice-Governor of the Philippines, is forty-eight years of age. He was born in Worthington, Ohio, in 1862, and at the age of 13 moved with his parents to Angola, Indiana. It might be said that he got his first start as a printer, serving his apprenticeship at the "cases" in the small printing offices of Worthington and Angola. By this means he secured the necessary funds to acquire an education, and later supported himself while attending the Ohio State University by teaching. It was a struggle, but he succeeded by continual application to secure admission to the bar at the age of 24. This meant that he studied law every moment he could find to devote to the task. About the time he was admitted to the bar, he was elected surveyor of Steuben County, Indiana, in which position he remained five years. In 1894 he ran for the office of District Attorney for his home district, and while he ran ahead of the ticket he was not elected. In 1896 he was elected state senator from his district, and in 1908 he received a commission as captain in the 157th Indiana Volunteers, enlisting for the war. His regiment did not proceed farther than Tampa. He returned after the regiment had been disbanded and completed his term as state senator. In 1900 he was elected Lieutenant Governor of his state and served a four-year term in that capacity. In 1904 he accepted the nomination for Congressman from the Twelfth District, Indiana, one of the strongest Democratic districts in the state and carried it by a majority of 2,000 against a candidate that had represented it for years.

Mr. Gilbert was a member of the Taft party that visited the Philippines and other points in the Orient in 1905, and it was during this trip that he became interested in the American problem in the islands. Upon his return to the United States he considered an appointment as judge of the Court of First Instance in the Islands, and in 1906 resigned prior to the state Republican convention where he would have been nominated without opposition and accepted the judgeship, arriving in the Islands in September of that year. He served in this capacity until June 1908 when he was appointed a member of the Philippine Commission. On March 1st he was given the portfolio of Secretary of Public Instruction, and on February 10, 1910, was confirmed as Vice-Governor, retaining his portfolio.

Vice-Governor Gilbert is a firm believer in industrial training, and this branch of general instruction is being made the feature of his administration.

While young in the U. S. Congress, Mr. Gilbert was selected as member of the Committee on Revision of Laws of the United States, on which important work a code committee had been working for over 12 years. Since that time the report of the committee of which he was a member has been acted upon and enacted into law. He is the President of the Board of Regents of the Philippine University and is identified with every public movement for the benefit of insular conditions. He is a member of the Army and Navy Club at Washington, the Columbia Club of Indianapolis, and the Army & Navy, Elks, University and Columbia Clubs of Manila.

THE SUBJECT OF IRRIGATION

The attitude of progressive governments to the subject of irrigation is evidenced by the yearly increase of areas benefited by these works. Irrigation, however, to be successful must be adapted to the needs of the community served to secure the best results, and the discussion of irrigation problems is of inestimable value in pointing the way to general improvement. India, more than any other country, has demonstrated the value of irrigation works, and large sums are being spent annually in this direction by the Indian Government. Indeed, so greatly favored is this line of Government endeavor that the Indian Press, from time to time, are disposed to criticise the Government for not spending more in irrigation works and less in the building of railways. *Capital*, the leading financial paper of India, in discussing this question, gives some valuable information on this subject. Of the above criticism *Capital* says:

"Criticism of this kind is usually resented, and perhaps one reason for this is to be found in a feeling on the part of the Government that they are called upon to do in this country work that would elsewhere be left to private enterprise. On the other hand, it can not but be observed that in respect to various branches of enterprise—including those of railway construction and irrigation—the people of India have some justification for the belief that the State desires monopolies. In lands where private enterprise undertakes the development of communications and of irrigation, the respective Governments do not impose arbitrary restrictions and do, as a general rule, go the length of giving all reasonable assistance when private capital is offered for employment in works of obvious public utility. If, for instance, we turn to the United States of America, we find it on record that of the total acreage under irrigation fully 95 per cent. is under private enterprises. In 1908 something less than 4 per cent. was irrigated by supplies furnished by the Government under its reclamation projects. Over 12,500,000 acres are being irrigated through the medium of what may be called the class of private irrigators; but to this class the Irrigation Branch of the Department of Agriculture and the various Western Experiment Stations are endeavoring to extend all the assistance within their power. The fact that assistance of this kind is given through the Department of Agriculture deserves special notice. To a very large extent, American irrigation works have for their immediate object the making of barren soil productive; and in this country, as well as in others, one of the main purposes of such works is the safeguarding of agriculture in the first place, and in the second place its improvement.

"Possibly, the State monopoly system that prevails in India offers advantages over private enterprise in respect to the important subject of management. But it is questionable whether the same keen interest is taken in operation and maintenance as in construction. A few months ago, the Chief of Irrigation Investigations of the U. S. Department of Agriculture enumerated certain questions without suggesting answers to them; and they are questions that could probably not be answered very readily even in this country, where the operation of irrigation works has been carried on for many more years than in the United States. The questions are as follows:—'Which is the best and cheapest water-supply? How much water is required to irrigate an acre of land? What grades shall be given to the channels in order to avoid erosion on the one hand and sedimentation on the other? How soon may settlers be expected to utilize both land and water and what form of water contract will deal justly with both company and water-user?' To none of these questions could one stereotyped answer be given, for the reply in each case must be affected by local conditions. But, broad as they are, the questions deserve careful consideration. *Apropos* of one of them, it is interesting to note that the authority cited above regards the system of proportioning water for canals on an acreage rate as productive of great waste. A fixed quantity of water cannot always meet the requirements of a definite area of land. The amount of water required varies from year to year and under the influence of many conditions. At the same time it may be observed that the solution of irrigation problems is perhaps much easier in India than in the United States. For one thing, the latter country has devoted its best energy to construction rather than to operation; for another, the reclamation of arid lands occupies a much larger share of the attention of irrigation in that country than it requires in this. Yet even when the soil is properly prepared, it is no easy matter to gauge the quantities of water sufficient for the needs of cultivated plants. Unquestionably, there is a wide field for investigation along this line and it must be studied carefully before the foundation of scientific irrigation can be said to be laid. Where it is not studied, and even where study has led to no decisive results, there is a grave risk that much of the irrigation that is carried on is of an improper kind."

GENERAL

Mr. John S. Hord, until recently Collector of Internal Revenue for the Philippine Islands, was recently selected as President and General Manager of the Spanish-Filipino Bank, Manila. Mr. Hord has been identified with the battle for free entry of sugar and tobacco into the United States and has been greatly interested in the protection of Philippine products from defamation by the trusts interested.

Mr. A. H. Hewitt, Chief Engineer of the Green Island Cement Company, was a visitor in Manila during Carnival week. He was greatly interested in the progress made in permanent construction in which the product of the Green Island Works has been so extensively utilized.

"*New Windmill Catalogue.*"—Fairbanks, Morse & Co. have just issued a very complete Catalogue on Windmills, Tanks and Pumps.

For the first time in the history of the Windmill business a complete treatise on the theory and practical construction of Windmills is now published so that the purchaser is enabled to judge for himself why wood is better material for constructing Windmills than steel. Technical information of the most important character never before published is given in this catalogue. These and the suggestions for installing Water Works Systems are of interest to all who have use for Windmills.

Special attention is called to the "FEMCO UNDERGROUND FORCE PUMP." This is a new type of Pump more universal in its application and more simple in construction than any pump of this class heretofore placed on the market.

Fairbanks, Morse & Co., Chicago, Ill., will send a copy of this catalogue to interested parties. Kindly mention this publication.

DYNAMIC FLIGHT

(Continued from page 415.)

Disregarding the flapping wing principle altogether he endeavored to devise a soaring apparatus in which a prime mover took the place of the natural motive power of birds and in which the buoyancy of the machine was attained by sustaining planes. On this system he built an aeroplane of some 300 square feet surface by means of which he demonstrated the advantages of setting the two planes at a dihedral angle in order to secure lateral stability. Unfortunately no engine was attached—a sufficiently light engine was not obtainable in those days—but Sir George Cayley states that on several occasions it succeeded in lifting a man from the ground. Later it is said that a primitive type of internal combustion motor, propelled by gunpowder, was affixed to a similar machine, and with this Sir George's coachman actually made an ascent for a very short distance. The pilot, however, when he found the aeroplane rising, promptly jumped out and was hurt.

To Sir George Cayley therefore goes the honor of devising the prototype of the modern monoplane, and although he did not actually bring his machine to anything like the state of perfection of aeroplanes as we know them, yet the principles of flight, as it is practiced to-day, are embodied in Sir George's machine.

Three other Englishmen—Henson, Stringfellow, and Wenham—were the next to give their attention to the subject. These gentlemen were contemporaries and flourished about 1840. In 1843 Henson designed a monoplane of which an illustration is given herewith. The striking similarity between this machine and the more modern Antoinette is most obvious although the dimensions given in Henson's patent specification show that his wings had nearly 15 times as much supporting surface as those of Mr. Latham's 1909 machine. The actual dimensions are:—Main wings 150 feet span by 30 feet depth (thus giving a total area of 4500 square feet). In addition there was a tail of 1500 square feet. The weight given was 3000 lbs. and Mr. Henson proposed to drive the machine by means of a very light steam engine affixed to the car close under the middle of the wings. The engine itself was rated at 20 horse power, while its weight—including boiler (filled with water)—amounted to 600 lbs.

A model of this monoplane was made by Henson and Stringfellow, but they found that a number of alterations were required before it was sufficiently stable to fly satisfactorily.

Mr. F. H. Wenham was the first (1866) experimenter to point out the convenience of dividing up the supporting surface and arranging it in series of planes placed one above the other, thus evolving the precursor of the modern biplane and triplane—which derive their names, of course, from the number of planes into which the supporting area is divided.

So many engineers had by this time entered the field of aeronautical research that it becomes quite a difficult matter to select the few whose achievements have helped to put us on the road to success. The difficulty is further increased by the fact that until about 1903 investigations were—with one exception (Maxim)—carried out entirely with models and gliders. Now, while it is admitted that models are a fairly satisfactory way of gleaning information, their performances *as* models are no indication at all of what they could do were they converted into full-sized machines. Gliders, however, being built to carry a pilot, proved to be a most useful means of teaching the aeronaut how to maintain lateral and longitudinal stability to control and direct his machine and the values of various areas and curves for supporting surfaces. The range of action of the glider was, however, extremely restricted as it could not be used unless certain favorable atmospheric conditions prevailed and then only from a specially prepared hill. There was thus a limit to the extent to which the practical work could go, for, until 1903, it is a question if there was an engine in existence sufficiently light and powerful, *combined with reliability*, to provide the motive power required to raise a man and machine from the ground and enable them to make a flight independent of the state of the wind.

Of the investigators to whom I refer there are a few names that stand out prominently from the many, and of these Mr. Lawrence Hargrave of Sydney, New South Wales, is referred to first, he being the immediate successor to Mr. Wenham in the order of prominence. Mr. Hargrave's work covered a long period of years beginning about 1879 when he first attracted attention by inventing the well-known box kite. With four of these connected to each other by means of a strong line and a seat slung onto the lower kite Mr. Hargrave made numerous ascents and descents. The kites—which had a total area of 232 square feet—were made of calico stretched over American redwood frames and weighed 38 lbs., the seat and line 7 lbs., and the aeronaut 177 lbs. With the wind blowing at 21 m. p. h. the pull, indicated on a spring balance, amounted to 240 lbs. *Engineering* of February 15th, 1895, gives the following particulars of Mr. Hargrave's experiments:—

Kite	Breadth of each cell		Depth of each cell		Dist. between the forward end of the forward cell to point of attachment of kite line.		Weight of kite		Length of each cell.		Dist. between cells		Lifting surface of kite.
	ft.	in.	ft.	in.	ft.	in.	lbs.	ozs.	ft.	in.	ft.	in.	sq. ft.
A.	5.	0	1.	10½	1.	7	5.	7	1.	11	2.	1	38.5
B.	5.	0	1.	10½	1.	7	5.	14	1.	11	2.	4	38.5
C.	7.	8½	1.	11¼	2.	8	9.	8	2	3	4.	5	69 0
D.	6.	6	2.	3½	2.	3	9.	0	2.	6	3.	6	65 0
E.	9.	0	2.	6	2.	10	14.	8	2.	6	4.	0	90 0

Subsequent investigations, conducted by Mr. Hargrave, were carried out with models driven by compressed air, but these, so far as we are concerned, are of comparatively little interest.

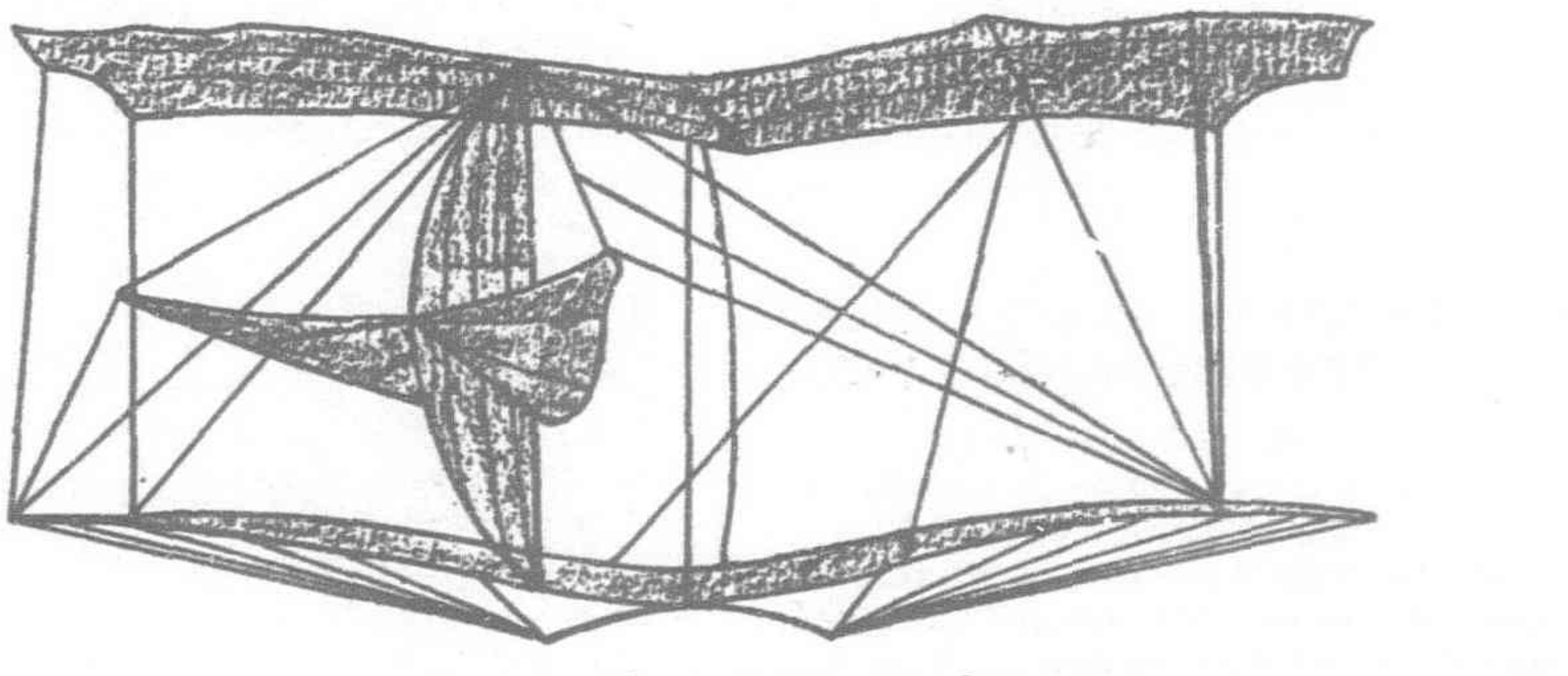
In 1884 Mr. Horatio Phillips of Wealdstone, Essex, patented what is known as the "dipping edge" section of planes. Phillips had worked for years on the problem of finding the most efficient shape for sustaining planes and eventually evolved the now universally used concavo-convex form in which the amount of convexity and concavity are plotted out in a certain definite ratio to the velocity of the sustaining air current.

We now reach the period from which the dawn of the modern flying era may be said to date—that is, with the advent of Otto Lilienthal of Germany, Professors Langley and Chanute of America, and Sir Hiram Maxim in England. Lilienthal—whose experiments are classical—was the author of a work, "Bird Flight as a Basis of the Flying Art," which was published as far back as 1889. In this he gave the results of many years' study and afterwards (1890) commenced putting them into practice by a series of gliding experiments.

After building several different forms of machine he eventually evolved a biplane glider of the type shown herewith. In this the two main planes had a span of 18 feet and a total supporting area of 100 square feet. From the top of a hill 50 feet high (in Berlin) he made many successful glides, but eventually, in 1896, when trying the machine in the Rhinerow Hills, he, by some means or another, lost control and was killed.

Professor Langley and Dr. Graham Bell built two models (in 1893-96) on the lines of what are known as tandem monoplanes—that is, two supporting planes mounted one behind the other on a framework. Both have flown for a mile under their own power over the Potomac River. Langley's model weighed 24 lbs. and measured 15 feet in length. The planes were set at an angle of 135° to each other and a small tail plane was affixed at the rear. The motive power was steam (the plant weighed 7½ lbs. per H. P.) and drove two 4-foot propellers at a speed of 1000 revs. per minute.

Professor Chanute—with whom Mr. Herring was associated—followed the lines of Lilienthal's experiments, but, later, evolved a type of biplane glider of his own which closely approximates to the Wright machine of to-day. This glider had a supporting area of 168 square feet and weighed 36 lbs. The longest flight recorded was 168 feet.



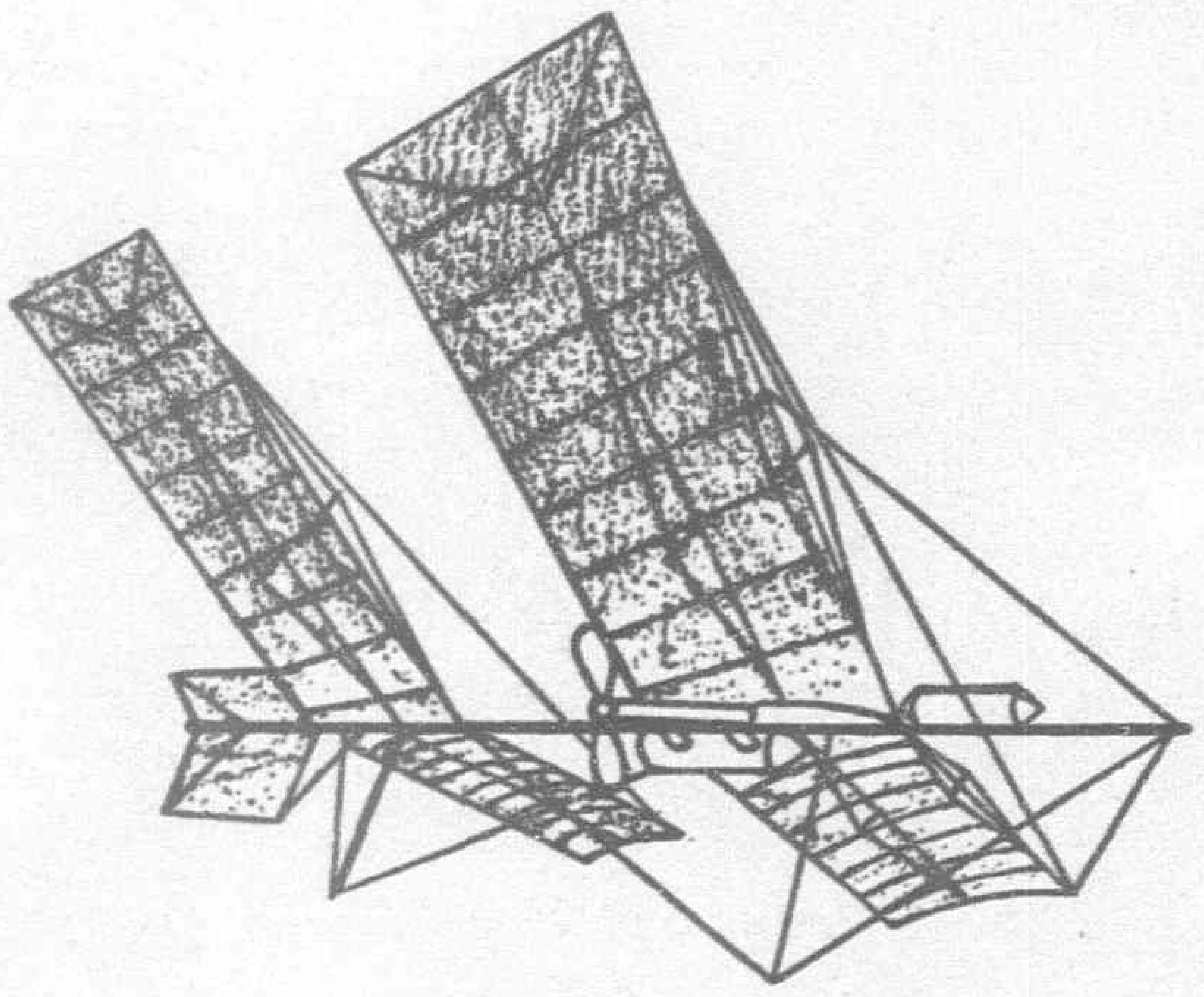
LILIENTHAL'S GLIDER OF 1895

During 1893 Sir Hiram Maxim built the remarkable steam flying machine which is still regarded by expert as one of the finest pieces of engineering work extant. Sir Hiram—who is, of course, well known to our readers as an inventor—exercised the same painstaking attention to detail in the manufacture of his aeroplane as he did in designing the Maxim quick-firer. Not only so, but, instead of trifling with models and gliders, he straightaway built a full sized machine which had a power plant of no less than 350 H. P. As one would naturally expect the Maxim aeroplane was characterised by an originality of design and construction so striking that it could only have emanated from the brain of a man capable of building such a clever piece of machinery as the famous automatic machine gun.

Sir Hiram's aeroplane was of a peculiar monoplane type—readily understood from the sketch herewith—with a framework built up entirely of steel tubes and wire stays. The total weight was 7000 lbs., the span of the planes

93 feet, and total lifting surface 4698 square feet. A power plant consisting of two compound condensing steam engines drove two screw propellers of nearly 18 feet diameter and 16 feet pitch at a speed of 350 revs. per minute. Firing for the water tube boiler was by gasoline burned in a large number of jets.

The tests with this mammoth were carried out at Maxim's home in Baldwyn's Park, Kent, but the machine was prevented from rising into the air by a system of guide rails placed some distance above the track on which it ran. At a speed of 40 miles per hour the lifting effect was found to be 3000 lbs. to 4000 lbs. On one occasion, when Sir Hiram and his assistant were on board, the lift was so great that the aeroplane broke clean through the guide rails and would certainly have ascended if Sir Hiram had not instantly shut off steam.



LONGLEY'S 1893-96 MONOPLANE MODEL

Owing to the expiration of Sir Hiram's tenancy of Baldwyn's Park the experiments had to be concluded and were not resumed.

The results of Maxim's work are admirably set forth in his fascinating book, "Artificial and Natural Flight," which I can heartily recommend to those interested in aviation.

Between 1893 and 1900 there exists a gap during which practically no advancement was made. At the beginning of the present century, however, Messrs. Wilbur and Orville Wright (two bicycle makers of Dayton, U. S. A.), built a small man-carrying glider on the lines of the Chanute with which they made a number of flights in the neighborhood of Kitty Hawk, North Carolina. A number of gliders of different sizes were built by the brothers during the years 1900 and 1902, and in 1903 they had so far progressed as to build a full-sized aeroplane equipped with a motor of 12 H. P.

It is interesting to note the difference in dimensions of the glider of 1900 and its power-driven successor of 1903. These are as follows:

	Sail area	Length	Span	Rudder	Weight.
1900 Glider.....	312 sq. ft.	4′ 9″	35′	14 sq. ft.	117 lbs.
1903 Aeroplane	538 sq. ft.	6′ 6″	41′	14 sq. ft.	745 lbs.

Four flights were made with the 1903 machine, the best of these being .48 mile in 59 seconds (approx. 30 m. p. h.) at a height of 7 feet.

In 1904 a new engine of 20 h. p. was fitted, and the extra power gained, combined with the additional skill acquired by practice in handling the machine, caused the brothers to make no less than 105 flights during the year. On one occasion Wilbur Wright succeeded in flying for 3 miles in 5 m. 17 secs. at an average elevation of 10 feet.

The year 1905 marks the most commercially successful epoch in the progress of the Wrights, for it was then that they built their now famous "White Flyer." "White Flyer" was larger than the 1903-04 machine by about 87 square feet sail area, but the same old 20 h. p. engine was used. Of the 49 performances of 1905 the best are:—

Sept.	26th	11	miles	in 18 m. 9 secs.
"	30th	12⅕	"	in 19 m. 55 secs.
Oct.	3rd	15.25	"	in 25 m. 5 secs.
"	4th	20¾	"	in 33 m. 17 secs.
"	5th	24	"	in 24 m. 38 secs.

Between 1906 and July 1908—the date of their arrival in France—no work was carried on by the Wrights other than in perfecting minor details and negotiating with various governments.

The first actual flight (70 yards) in Europe was performed at Bagatelle by M. Santos Dumont on the 23rd October, 1906, on a huge box kite of 39 feet span fitted with a 50 h. p. engine. This was followed by Mr. Henry Farman who—on the 13th January 1908—won the "Deutsch-Archdeacon" prize for a kilometer circular flight which was accomplished in 1 m. 28 secs. By July the 6th he had beaten his own record by flying for 19 minutes at Issy-les-Moulineaux. Blériot's first success was, curiously enough, made on the same day, although he had by this time built and tried no less than seven machines of different types. On the occasion in question he flew for 8 m. 24 secs. on his No. 8 monoplane.

By now French activity was thoroughly aroused and many budding aviators entered the field, most prominent of these being Robert Esnault Pelterie, De Pischoff, Leon Delagrange, Demanest, Cornu, and Gastambide-Mengin (the designers of the Antoinette).

Wilbur Wright arrived in France in July 1908 and made his first flight at Le Mans on August 8th, but only remained in the air for 1 m. 45 secs. In this short time, however, Wright handled his machine with such unusual dexterity that the general opinion was that (as one of the technical journals expressed it) "either the Wrights were in possession of a very extraordinary machine or else they had gained an unusually complete mastery over the technique of free flight. Continuing his performances Wilbur Wright gradually ran up his record until—on the 31st of December of the same year—he won the "Michelin" trophy by remaining in the air for 2 hours 20 minutes 23⅕ seconds, in which time he covered 93 miles.

Such briefly is the history of the sequence of events that have led up to the present stage of development of the great aviation movement. The next article of this series I propose to devote to a simple treatment of the working of the aeroplane and, later, I hope to give detailed descriptions and drawings of the leading types.

(To be continued.)

THE ANTAMOK VALLEY MINING CO.

The prospectus of the Antamok Valley Mining Company of Benguet was issued last month. This company is capitalized at ₱500,000, shares ₱1.00 each, of which ₱300,000 were issued and ₱200,000 disposed of since the publication of the prospectus. The president of the company is Dr. J. R. McDill, who is interested in several mining companies operating in Benguet, and Dr. Ariston Bautista, President of the Germinal Cigar Factory, is Vice-President. Mr. H. T. Fox, of Smith, Bell & Company, Ltd., is Secretary-Treasurer, and Messrs. Smith, Bell & Co., Ltd., Manila, are General Agents. This company controls twenty-one mining claims in the Antamok Valley, the most of which have been to a large extent developed and show ore of a high grade present in paying quantities. It is proposed to install a mill of twenty stamps, cyanide outfit, and otherwise develop the property at an outlay of ₱200,000. For this purpose 200,000 pesos worth of stock was offered at par, and we are informed that the entire amount has been taken up. The following excerpts from the prospectus give a comprehensive idea of the extent and character of the property at its present stage of development:

"The Antamok Valley Mining Company was formed for the purpose of developing twenty-one gold claims of over four hundred acres in area. The claims lie partly on the southeast slope of the Antamok River Valley, and partly on the south slope of the Gold Creek Valley, near Baguio, in the Sub-Province of Benguet, P. I., which, with about twenty additional claims recently acquired, are now owned or controlled by the Company.

"They lie near to the well-known properties of the Bua Mining Co., Ltd., and the Benguet Consolidated Mining Co., Inc., both of which companies have six stamp prospecting mills and cyanide plants in successful operation, with ore in reserve for many years milling on a larger scale. The Antamok Valley Mining Company's claims are therefore in a proven district. Other properties near by—The Madison Gold Mining Co., Camote-Clayton Mining Co., the Headwaters, Muyot, the Kelly Mines and other groups—have all proved the mineral wealth of the Baguio district, and in many instances have got well beyond the prospect stage and are ready to extract values.

"The reefs are regular, in place, large in size, and offer the great tonnage and good values so desirable for gold production on a large scale.

"*Description of the Antamok Valley Mining Company's Property.*—The holdings consist of twenty-one mineral claims in two adjacent groups, which will be operated separately.

"*Names of the Claims.*—Van Buren, Harrison, Tyler, Cleveland, Wheeler, Bob Evans, Jackson, Monroe, Arthur, Lee, Broken Axe, Taylor, Last Dollar, Meisic, Fillmore, Pierce, Buchanan, Grant, Hayes, Eastman, Egbert.

"This number can be doubled by option at a low figure. The groups are named the Antamok Group and the Gold Creek Group, after the slopes of the rivers on which they are located; see accompanying map of the district. The mineral area of about four hundred acres now held by the Antamok Valley Mining Company is the last ground of the Antamok region proper, and is the apex of the main lodes of the district, as it catches most of the big Bua leads, the main Madison leads and also the Camote strike.

"*Superintendent's Report of October 31, 1909.*—No. 1. Main tunnel (see map) starts near the centre of the east side line of the Grant and runs N. 31° W. a distance of 170 feet. This is intended to be the main working tunnel, and will require 600 feet to reach the large calcite lead on the Hayes, on which reef we have our best ore at present. In that distance several other leads will be cut at depths of from 200 to 400 feet, all of which show some values at surface. The tunnel is 4½ feet by 7 feet inside of timbers, well timbered, and is tracked with 4×6" sawed ties and 14-lb. steel rails. In the face of the tunnel a good lead of free gold quartz is showing, of which no test has been made.

"No. 2 is a crosscut tunnel on east side of creek above main tunnel driven N. E. for the purpose of cutting leads on that side. Two leads were cut at 25 and 60 feet. The tunnel was continued a distance of 96 feet, and is timbered and lagged its entire length.

"No. 3 tunnel is the drift on the lead on west side of creek, a total of 159 feet. It includes two crosscuts at points where the lead was cut. At the present terminus the lead is 12 feet wide, the hanging wall is soft, quite heavy in sulphides, but shows no free gold. The centre is a hard quartz about 4 feet wide. On the foot wall there is 2½ feet of lead matter that pans from $4 to $6 free gold. The tunnel is in good condition.

"No. 4 is a tunnel on a big lead on the corner of the Buchanan and Egbert claims, on which work has just been started. Course S. W. and N. E.

"No. 5 is a tunnel crosscutting the Hayes lead, and from this point ore assaying $19.84 was taken, but the tunnel opened into old native workings.

"No. 6. A crosscut 50 feet below No. 5 showing 12 feet of lead matter, much softer ground, old Igorote (hillmen) workings still in evidence, assay of $26.87 taken here.

"No. 7. 50 feet below No. 6 lead, somewhat faulted, but in hard ground. Assays taken show values of $9.90 and $11.37. Tunnel carried 90 feet. At 50 feet the lead split, one vein of two feet taking a northwest course, the other of four feet turning almost due west. Tunnel continued to 90 feet on northwest lead, where three feet of good ore was found, and here a crosscut was driven at a right angle for 22 feet, where lead matter began to show

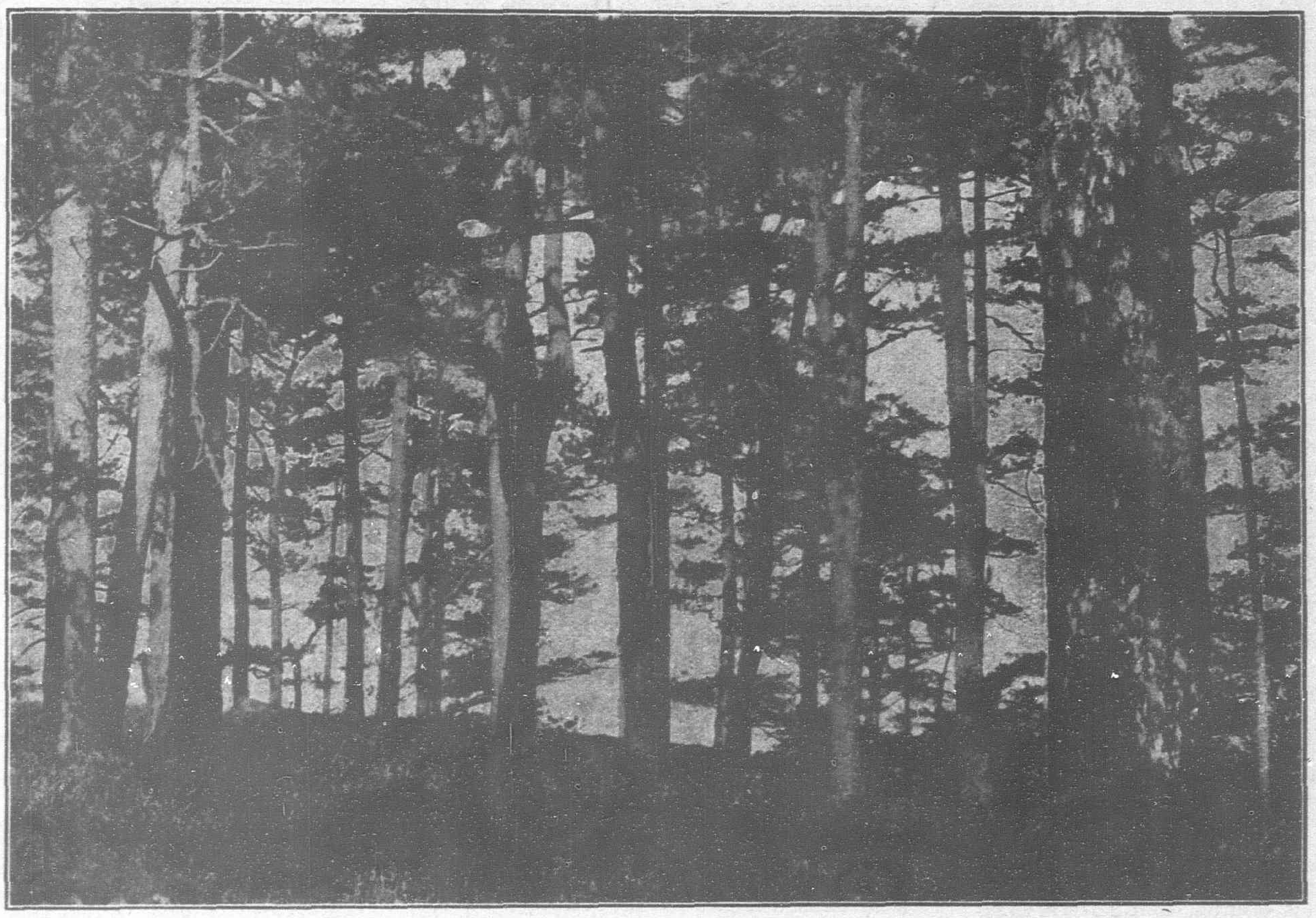
VIEW OF THE ANTAMOK VALLEY
(Taken from Station Eveland)
Foreground on the right covered by a part of the "Antamok Group" of the Antamok Valley Mining Company's Claims

The breast of this tunnel is now almost directly under point No. 5.

"No. 8. Lead is opened 90 feet below point 7 in an open cut exposing 4 feet of ore that pans. This lead is uncovered by slides in several places.

"Between No. 7 and No. 8 there is a distance of 1,000 feet, all of which pans well; between No. 5 and No. 7 there is a big block of milling pay ore. Exact tonnage cannot be estimated until upper and lower levels are connected.

"No. 9. A 30-foot tunnel on Polk near west line has been driven here, and the lead shows values of $12.42. A strong lead of calcite and manganese is exposed by a slide at this point for 250 feet, all of which shows strong free gold values.



TYPICAL TIMBER STAND ON BAGUIO PLATEAU

"*Gold Creek Group.*—Timber is abundant for mining and for construction work of all kinds. Where the Fillmore and Pierce claims cross the Itogan river, there is an excellent mill site on either claim which will be approximately 2500 feet from the main tunnel on the Grant. During the last dry season our Superintendent measured the water, and according to Mr. Shea's estimate it indicated a horse power of 39. With 3000 feet of flume, all on the company's ground, a point would be reached for an intake where there would be no wash to contend with, which will give head of 150 feet and still leave the mill high and safe above the river. This power will operate 20 stamps, and more is available.

"A surface tram is feasible from the Grant tunnel or an aerial tram from the Hayes or from the other claims as conditions may determine. The distance from the Hayes where the ore bodies are opened up will require a surface tram line of about 3400 feet.

"*Houses and Tools.*—The Company has a full supply of tools, a storehouse, and workmen's and Manager's houses on this group, 452 feet of steel track laid in main working tunnel, and in stock 3,000 board feet of sawn lumber ready for use.

"*The Antamok Group.*—The Antamok Group has eleven full claims or about 250 acres. They lie about the Madison Gold Mining Company's claims, which were recently sold under lease and option to an American syndicate, which undertakes, if their engineer approves, to develop the property and have a 20-stamp mill in operation by the end of 1911.

"On this group, the surface indications everywhere are most excellent, and are as good as, or better than, any of the other properties of this district, several of which have shown commercial value by the expenditure of small amounts of money.

"There are many leads or veins; the principal one is a large calcite reef which has been traced from the north to the south end of the group, a distance of about seven thousand feet. It is on this group, Mr. Shea says, that about 1,000 feet of backs can be procured with 1,000 feet of tunnel.

"Timber is plentiful, and the water here will develop power for an 80-stamp mill.

"If the lower four claims alone develop up to their surface indications, it will be as good a mining proposition as could be desired.

"There is a splendid mill site on the southeast corner of the Arthur claim, high above any possible danger from floods. It is at this point that there is an indicated horse power at low water of 66, and by fluming to a head of 100 feet, which can be done, power will be developed for 80 stamps.

"It is intended to push development work on this group as rapidly as possible.

"The 1000-foot tunnel required to crosscut the big calcite lead at depth of 1000 feet can be driven in twelve months by working three shifts of miners.

"This main lead can be drifted on at the same time at a higher level by picking it up where it crosses some of the deep gulleys.

"Last year the Directors declined a year's option of ₱10,000 each for the eleven claims of this group.

"*Extracts from Mr. C. Shea's Expert Report Made January, 1909.*—The claims are easily accessible from Baguio by the Baguio-Itogon road and by the new road through the Kelly claims. The slope of the ground in both valleys is very steep, and the "reefs or leads" dip in the same direction as the ground slopes, making an ideal prospecting proposition, by means of crosscut tunnels to be driven from points at or near the levels of the different stream beds, and at right angles to dip of reefs or leads.

"The Gold Creek Group carries a number of parallel leads, which have been opened up at intervals; the outcrop of these leads has been traced for several thousand feet, and open cuts have been made to prove that the ledges were in place and continuous, and not mere 'blow-outs' of quartz.

"Samples were taken from each of the openings and panned roughly, free gold being found in each instance. The distance from the first or most northern to the third lead is about 400 ft., the second lead being about 150 ft. from the No. 1 lead. The openings on Nos. 1 and 3 make the width of ledge between walls appear about 7 ft., No. 2 being much smaller. An average sample from No. 3 lead, taken across a width of eight feet of lead matter, showed free gold values of $6.00 per ton; with 1 or 2 per cent of sulphurets, the value of which was not determined.

"These three reefs may be cut by the same crosscut tunnel by means of which backs of from 200 to 400 ft. may be obtained.

"Much of the Company's property is covered with pine forest, and timber of good quality is plentiful and convenient, and a crosscut tunnel 600 ft. in length will cut the three main leads. The 'strike' of the leads is almost due east and west, and the 'dip' is south.

"On the Antamok Valley Group a large calcite lead, showing traces of manganese, crosses the claims. The strike of this lead is nearly north and south, and it has been traced on the outcrop for several thousand feet. This vein also dips with the slope of the ground, and, roughly speaking, 1000 feet of crosscut *would give* 1000 feet of backs. It is quite possible that in some of the deep ravines which cross the strike of this ledge, a place could be found where a drift could be driven on the ledge and several hundred feet of backs obtained.

"Timber is plentiful on this group and of good quality for mine as well as for sawed lumber for erection of plant when required. Water power is obtainable from either the Antamok or the Itogon rivers.

"Taken as a whole the group presents a proposition susceptible of extensive development at comparative small cost.—C. SHEA,—*Manager Bua Mining Co., Ltd.*

"*Water, Power and Drainage.*—All the drainage from the eastern half of the Baguio district feeds into the Itogon river. The Antamok river drains the smaller valley east of the Pakdal-Itogon ridge and possesses no tributaries of any magnitude. At its headwaters east of Pakdal there is a large basin of auxiliary drainage. A short distance below Antamok, the Antamok river joins the Itogon, of which it is a lateral tributary. The Itogon drains the area from the Pakdal-Itogon ridge to the Kias ridge, through several good-sized streams, like Gold Creek, the Butuan Creek and many smaller streams. Gold Creek has the larger territory, heading in the east and south slopes of the Baguio Plateau and reaching Kias Ridge with its eastern branches. Its volume normally is greater than that of the Antamok, and throughout its area the lateral branches have kept pace with the erosion of the main channel, cutting a well-defined basin between the Kias and Pakdal-Itogon Ridges.

"The Butuan heads in the Kias Ridge and again resembles the Antamok in its clean cut valley with little lateral extension.

"The measured power on the Antamok Valley Mining Company's properties will energize the wheels for 100 head of stamps. The water rights to all this power have been secured for the Company.

"The question of power for the entire Baguio mining region when developed on a large scale will be solved by harnessing the immense energy of the Agno river. At a point but seven miles to the east 20,000 horse power is considered a fair estimate. The water of the Agno has also been officially measured at its mouth, 50 miles away, during the past two years, and although no exact profile has yet been made of the river's bed, the most competent men in the Philippines to judge this class of power are of the opinion that the possibilities at the Agno's mouth will be from 60,000 to 80,000 horse power—enough to furnish power, light and heat to half of the island of Luzon.

"*Organization.*—The organizers of this Company are men who have been concerned in prospecting, developing and managing gold properties in the Philippines since American occupation. Messrs. Bayer and Colgan, discoverers of the ground, received their early training in the western mining camps of the United States. The Company has made an arrangement with Messrs. Smith, Bell & Co., of Manila, whereby this firm become their General Agents, thus insuring continuity of management, a most important matter especially in the Philippines. This will, moreover, in the opinion of the directors, guarantee careful and economical administration.

"There are no preference shares of any sort in the Antamok Valley Mining Company and each share is fully paid up and non-assessable. The promoters have agreed with the holders of the ground that they will receive for the twenty-one claims one-half of the capital of the company. Fifty thousand pesos in script has been issued to the pioneers, who have placed the speculative capital necessary to show the values and large tonnage that is possible. The remaining ₱200,000 is issued to further develop, equip and take out bullion during the coming year on the Gold Creek Group and at the same time to open up the Antamok side. The present capitalization is the actual value of ore now in sight.

"More money carefully expended in development should increase the value of milling ore to such an extent that the property will be worth five or ten times its present capitalization.

"*Plan of Development.*—The area of ground, the numerous leads, their size and value on surface and in depth, the fact that they are in place and improve in value with depth as have all ore bodies in the district, decides the Company to determine upon a policy of an initial installment of not less than 20 stamps and equivalent cyanide and other processes needed on each group. Determined development for four or five months more, we are sure, will justify this policy; indeed, the tonnage already seems to warrant ordering a 20-stamp mill, the erection of which would take about nine months.

"The company is negotiating for a first class millwright and millman to install and manage the first plant.

"*Values.*—Assays made by the Philippine Government Assay Plant as the work has progressed give the following values in U. S. Currency per ton of ore:—

April 22, 1909	$10.40
June 10, 1909	20.67
July 12, 1909	10.34
Aug. 26, 1909	19.84
Aug. 26, 1909	22.87

"The last two assays were taken from the Hayes 6-foot lead from the face of the tunnel.

"On August 28, 1909, our Superintendent reported that a strike had been made on the Hayes, panning high in free gold. Assays of these samples made by Government Assay show values of $9.09 and $11.36 U. S. Currency. Previous assays taken from the property are as follows:

Size Feet	Strike	Oz. Gold per ton	Valre U. S. Cy.	Oz. Silver per ton	Name of claim
4	N. W. & E. S.	0.24	$ 4.96	0.38	Tyler
8½	N. W. & S. E	0.66	$13.64	0.70	Harrison
7	S. W & N. E.	0.54	$11.16	0.26	Van Buren
5	S. W. & N. E,	1.04	$21.50	0.62	Cleveland
36		0.52	$10.75	0.34	Lee
6	N. E. & S. W.	0.96	$19.84	1.30	Taylor
30	N. W & S. E.	1.60	$33.07	1.20	Meisle
4	S E. & N W.	0.20	$ 4 13	0.24	Polk
5½	S. W. & N. E.	0.96	$19.84	0.96	Hayes

The foregoing assays are from but nine of the numerous leads in both groups.

THE SHANGHAI TRAMWAYS

The operation of the Shanghai Tramways up to September 30th, 1909, has resulted in a deficit which amounts in all to $196,946.03. The line was formally opened to traffic on March 5th, 1908, under an agreement by which the municipality was to supply the necessary power at fixed rates and the company to pay the municipality a royalty of five per cent of the gross receipts. The company made a request on the Municipal Council for a reduction of rates charged for power and for the privilege of substituting shares in lieu of payment of the royalty. The Council considered the proposals favorably offering to reduce the rate at which the power is furnished and to abolish the royalty until the company is in a position to pay a dividend. The attitude of the Council appears to indicate a desire to assist this enterprise in every way consistent with the best interests of the ratepayers. A recent number of the *Shanghai Municipal Gazette* is devoted to a review of this subject and contains much of interest relative to the operation of the company. We quote a few excerpts from a memorandum reviewing the financial position of the tramways contained therein.

"The following statement shows the revenue and expenditure of the Tramways Undertaking from the opening on March 5, 1908, to September 30, 1909:—

	March 5, 1908, to January 31, 1909 (Original Fares.)	February to September 30, 1909 (Revised Fares.)	Total.
RECEIPTS.			
Cash Fares	340,223.80	310,851.82	651,085.62
Less loss on subsidiary coinage	58,321.94	74,997.64	133,319 58
Net	281,901.86	235,864.18	517,766.04
Coupons	36,066 55	12.636 19	48,702.74
Season Tickets	12,829 00	36 271 00	49,100 00
Sundry	9.673.93	8,457.74	18,131.67
Total Receipts	340,471.34	293,229.11	633,700.45
EXPENSES.			
Traffic	93,566 06	65,726 97	159,293 03
General	61,843.94	49,217 60	111,061.54
Repairs	54,081 90	57,366.38	111,448.28
Power	99,979 40	81,383 83	181,363 23
Royalty	16,539.87	14,238.53	30,778 40
Shanghai Expenses.	326,011.17	267,933.31	593,914.48
London expenses including interest on Loan (up to £26 000) at 4% per annum	36,466.51	26,521.12	62,987.66
Provision for renewals at 3% per annum on £320,000	100,571.46	73,142 88	173 714 34
Total	463,049 17	367,597.31	830.646 48
Deficit	122,577.83	74.368.20	196 946 03
Car Miles run	1,708,770	1,312,202	3,020,972

"The authorized and subscribed Capital of the Company is £320,000.

"The expenditure incurred on Capital Account has been approximately £346,000; and the sum of £26,000 has had to be borrowed at 4 per cent interest, partly to enable the Company to pay its current obligations in connexion with the operating of the Tramways.

"From the foregoing statement of revenue and expenditure it will be seen that the Company has lost up to September 30, 1909, nearly $200,000 in operating the Tramway Service. Whilst the system has been kept in efficient repair, the running expenses (excluding power and royalty) have been extremely low, equalling only 2.65d. for each mile run as compared with about 5.00d. for most Home systems. The charge per unit for current, however, has averaged 1.323d. in Shanghai as compared with 1.137d. for a number of Home systems taking about the same quantity.

"Whilst the number of passengers carried has more than equalled the average for single deck cars in most other parts of the world, the revenue has not nearly approached the standard of other places or that originally expected by all concerned. It has averaged only 4.28d. for each mile run as compared with about 10d. on most Home systems. There are two reasons for the comparatively low earnings in Shanghai:

(1) The extremely low fares necessitated by the unprecedentedly large service of very cheap ricshas.

(2) The loss by exchange of subsidiary coinage which has amounted to no less than $133,319 up to September 30, 1909.

"The first circumstance was not, apparently, taken into account when the concession was granted, and the second could not have been anticipated as, prior to that time, copper coins had circulated at a premium. The $133,319.58 loss represents average rates of 128.80 and 113.1 per dollar for copper and small silver respectively; the rates when the Tramways started were 114.66 and 111, but the depreciation has now increased to 135.1 and 114.2 respectively per dollar. Everything that the Company could do to overcome loss by exchange has been by means of Season Tickets and Coupons, but it is impossible for an undertaking such as Tramways to counteract more than a very small proportion of these subsidiary coinage losses from which now the whole native population of China is suffering.

"In addition to the amount of $184,266.31 paid to the Municipal Council for power, the expenditure to September 30 includes royalty to the Council amounting to $30,778 and also about $14,500 for road maintenance (macadam) entirely for the benefit of other vehicular traffic. (The total payments to the Council have amounted to $229,554.31.)

"The Council has assisted the Company by acceding to its requests for revision of sections and fares; and, but for these modifications (partly increases and partly reductions) and also the introduction of Season Tickets, the loss to September 30, 1909, would have been considerably greater. It is recognized, however, that prevailing conditions are not such that fares higher than those at present in force could be introduced with advantage. The question, therefore, comes to be: in order to enable the Company to carry on this public utility with as little loss as possible, will the Ratepayers authorize the Council to grant relief to the Company as follows?

(1) Reduction of charge for power from the present rates of 4.8, 4.6, and 4.4 (averaging 4.55) tael cents per unit to a flat rate of 3.75 tael cents per unit.

(2) Entire relief from maintenance of road paving.

(3) Abolition of royalty of 5 per cent on receipts.

With respect to No. (1), had the 3.75 rate been applied from the beginning the amount paid by the Company would have been $35,170 less. Had the accounts for current been paid for in the coinage collected on the cars they would have been further reduced by $37,774. These amounts added to the royalty of $30,778 and the cost of maintenance of macadam, viz., $14,500, would have reduced the total loss from $196,946 to $78,724. The Company is confident that the Ratepayers will recognize the difficulty of the position and sanction the granting of the relief asked for. Whilst the Company makes this application for special treatment at the hands of the Ratepayers on grounds of financial necessity and of the unique difficulties affecting Tramway operation in Shanghai, the following points are set forth for general information as showing that, apart from these considerations, there are good grounds for the abatements asked for:—

(1) *Power.*—The rates charged at present will be found in the extract from the Power Agreement. The following, briefly, are the reasons which it is thought justify the proposed reduction to a flat rate of 3.75 tael cents per unit:—

(i) The quantity originally estimated, viz., 1,250,000 units per annum as per Schedule B of Power Agreement has all along been greatly exceeded, the figures for the actual amount taken being—

1908.	Total units.	Equal to units per annum.
June to December.....	1,146,434	1,965,315
1909.		
January..............	192,632	2,311,584
February.............	184,237	2,210,844
March................	201,610	2,419,320
April................	170,737	2,048,844
May..................	161,025	1,932,300
June.................	148,938	1,787,256
July.................	146,053	1,752,636
August...............	145,503	1,746,036
September............	149,107	1,789,284
Averages.....	165,392 per month	1,984,704 per annum

Mainly owing to the high rate for current, the Company has had to curtail its services within recent months in order to minimise losses. It is obvious that the amount of current taken is an important factor in determining the price per unit. This is borne out by the following tables:—

Table A.—Home systems taking approximately the same amount of current as the Shanghai Tramways.

	Units per annum.	Charge per unit.
Bury....................	2,639,874	.932d
Dundee..................	2,437,428	1.25
Stalybridge.............	2,311,875	1.00
Rochdale................	2,064,318	1.12
Blackburn...............	2,023,577	1.40
Stockport...............	1,979,868	1.16
Aberdeen................	1,955,858	1.10
Average.........		1.137

Table B.—Home systems taking approximately the amount of current mentioned in the scale of charges in the Shanghai Power Agreement.

	Units per anum.	Charge per unit.
Southampton.............	1,418,379	1.875d.
Wallasey................	1,408,151	1.62
Blackpool...............	1,287,152	1.79
East Ham................	1,301,957	1.50
Newport (Mon.)..........	1,269,431	1.35
Rotherham...............	1,263,752	1.50
Derby...................	1,262,471	1.50
South Shields...........	1,232,252	1.381
Average.........		1.564

"The average of the systems in Table A, in which Shanghai ranks, *according to consumption,* is 1.137d. per unit, and the average of the systems in Table B, which approximates to the smaller consumption contemplated in the Power Agreement is 1.564d. The former rate is 27.3 per cent less than the latter and this percentage of reduction on our present average rate of 4.55 tael cents per unit would give a rate of 3.31 tael cents, but the Company only asks a reduction to 3.75 tael cents.

(ii) That the cost of production by the Council as embodied in Schedule B of the Power Agreement (upon which the scale of charges was based) has been found to be overestimated in respect of the following:—

(*a*) Coal was taken in Schedule B at 5.4 lb. per unit generated. In the Electricity Department's published figures for January and February 1909 the coal used for all purposes is given as 4.97-lb. per unit generated. A traction load being so constant gives much greater economy, in coal (say 40 per cent) than an ordinary lighting, etc., load. This means that with an overall average of 5 to 5½-lb. per unit the coal for traction alone should be from 3½ to 4-lb.

(*b*) Schedule B includes interest at 7 per cent, and depreciation at 7½ per cent. The highest rate paid on the Electricity Department loans is 6 per cent and the rate adopted for depreciation of generation plant as per the published accounts is 7 per cent.

"At a Special Meeting of Ratepayers, held June 6, 1905, the Chairman of Council stated that the rates to be charged for current to the Tramways were calculated to produce a profit of 'fully Tls. 16,000 per annum.' This was based on 1,250,000 units per annum and on expenses as per Schedule B referred to. But the 1,250,000 units have been exceeded by no less than 60 per cent and the expenses in Schedule B overestimated as just explained. The *actual* profit must, therefore, be much greater than Tls. 16,000. Careful calculations, based on the Electricity Department's published results, indicate that on 2,000,000 units per annum for Tramways, the profit, after meeting all obligations, is about Tls. 36,000. On that quantity the proposed reduction to 3.75 tael cents per unit would amount to Tls. 16,000. The Electricity Department, therefore, would still be receiving greater profit from the Tramways than was at first expected—with prospects of increasing profits due to the additional service of trams which the 3.75 rate would encourage.

(iii) To small consumers of electricity for power, heating and cooking, a reduction was made in January last from 5.75 to 4.75 tael cents per unit = 17.4 per cent for those taking over 130 units per month per horsepower or kilowatt installed. That is to say, a consumer with a motor of one horse-power taking anything above 130 units in the month is charged at 4.75 tael cents per unit: under the existing scale, the Tramway Company has to purchase over 4,615 times that quantity, viz., 600,000 units each year at 10 per cent higher rate, viz., 4.8 tael cents per unit. The proposed reduction of the Tramway rate from the average of 4.55 to 3.75 tael cents is equal to 17.5 per cent. (Were the accounts for current paid in the coinage collected on the cars the reduction would be over 25 per cent on the basis of present exchange losses.) For these reasons it is considered that the Company is fairly entitled to the proposed reduction to 3.75 tael cents; and the Company begs to suggest that (especially in view of the facts mentioned in paragraph II immediately preceding and the necessity of assisting the Company in connexion with its losses) this rate be made retrospective as the Ratepayers, in their discretion, may decide.

(2)—*Road Maintenance.*—In the days of animal traction the Tramway horses running on the tracks caused considerable wear to the surfaces, and there were good grounds, therefore, for holding the Tramway undertaking responsible for the maintenance of the Tramway portion of the roadway. The introduction of electric traction rendered it necessary to construct a much more expensive form of track to stand the greater weight of the electric cars and the tractive effort of the wheels. But, with the abolition of horses, the operation of Tramways ceased to cause wear to the road surfaces, and it is now being recognized that there is an absence of equity in the arrangement under which the Tramway undertaking is called upon to pay for the wear caused by other traffic. The cost to the Tramway Company, so far, for maintenance of macadam has been about $14,500. Very little expenditure has been required for the wood paving, but the continuous running of iron-tyred ricshas over it has already worn the blocks into distinct grooves; and the deterioration of this paving is an item which would increase further the loss of the Tramway Company. It is considered that, if the Company maintains, as it does, the concrete foundation of the track, the rails and the granite setts alongside them, it might reasonably be relieved of the cost of maintaining the macadam and the wood surfaces of the track (Clause 16 of the Concession Agreement) which are provided for other traffic. Even then the community would have benefited by the Company having paid the capital cost of the wood paving, approximately $100,000.

(3)—*Royalty.*—The Municipal Council, in seeking to safeguard the interest of the Ratepayers, as it did so ably in arranging the details of the Tramway Concession in 1905, no doubt considered that the terms imposed were such as could be fulfilled without difficulty. No one, however, could say positively what the difficulties of Tramway operation would be, but it is now clear that the benefits of an ample and developing Tramway service, so necessary to the commercial and industrial growth of a city like Shanghai, cannot be obtained without permanent amelioration of the terms of the Concession.

The amount paid to the Council in respect of royalty on receipts up to September 30, 1909, has been $30,778.40. Royalty, whilst based on receipts, is generally presumed to be payable out of profits, but in the case of the Shanghai system it has had to be paid out of capital. There are other neighbouring places, however, where, although a reasonable margin does exist, a 5 per cent royalty on gross receipts is not payable. Reference to the accounts of the Hongkong Tramways shows that nothing at all is paid for royalty, whilst in Singapore the royalty for the year 1907 only amounted to about $3,000, being 5 per cent on the *net* receipts after providing for London expenses, and depreciation. (In Hongkong mainly owing to the traffic conditions, a satisfactory revenue is earned for every mile run which is also the case in Singapore, partly for the foregoing reason and partly because of there being only a trifling loss by exchange. Both these systems, however, are handicapped by a very large capital, Hongkong being about £38,000 per mile of single track and Singapore about £29,000, as compared with about £13,500 for the Shanghai system).

The Company, therefore, petitions the Ratepayers for relief under this third head and suggests the cancellation of the royalty.

The following is the statement of passengers:

	March 5, 1908, to January 31, 1909 (Original Fares.)	February 1 to September 30, 1909 (Revised Fares.)	Total.
First Class.			
Cash Fares and Coupons..............	991,410	871,739	1,863,149
Season Tickets (estimated)............	265,054	756,203	1,021,257
Total.....	1,256,464	1,627,942	2,884,406
Second Class.			
Cash Fares and Coupons............	7,572,743	5,649,258	13,222,001
Season Tickets (estimated)............		7,092	7,092
Total	7,572,743	5,656,350	13,229,093
Grand Total....	8,829,207	7,284,292	16,113,499

NEW ZEALAND RAILWAYS

The Public Works Statement, issued by the Minister of Public Works of New Zealand and covering the year ended March 31st, 1909, indicates unusual activity in this department. During the year the expenditure for all works amounted to £2,169,278 net, of which £1,349,110 were spent in the construction and maintenance of railways. The total length of line opened during the year was approximately *126* miles.

The total mileage open in New Zealand at the end of March, 1909, was 2682 miles approximately and the number of miles authorized, 4622. Of the latter approximately 1800 miles have been surveyed and work is in progress along many sections. The capital represented by investment in railways up to the end of the fiscal year referred to amounts to £25,329,177.

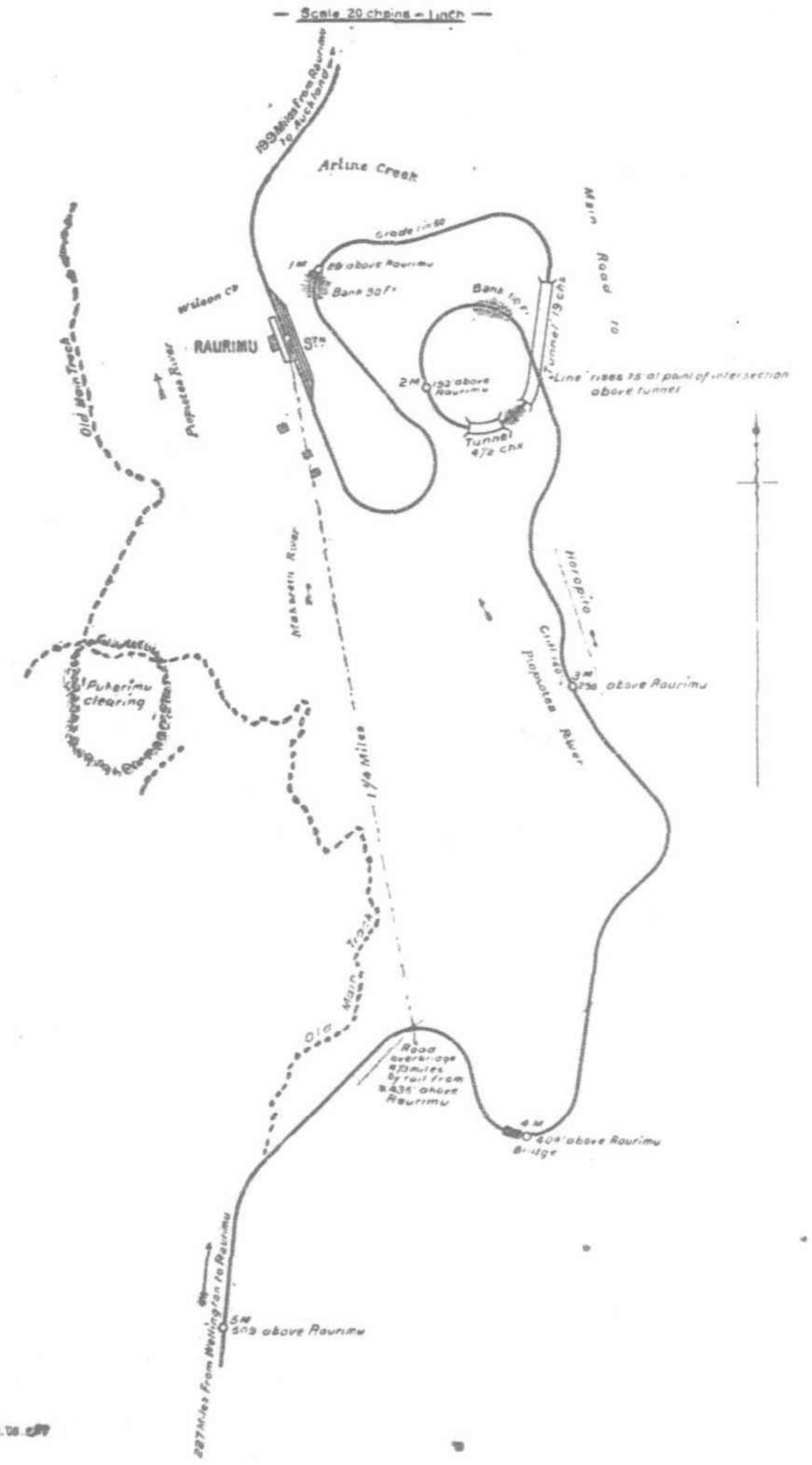
The estimates submitted for the year 1910 include a vote of £790,000 for railway construction and £350,000 for additions to open lines, making a total of £1,140,000. Of this amount £250,000 will be spent for rolling stock and additional workshop machinery.

In his report for the year, the Honorable Roderick McKenzie, Minister of Public Works, makes the following reference to the development of railways during the year:

"As I have already mentioned, the length of new railway opened for traffic during the year was greater than during any similar period for thirty years past. This was principally due to the completion of the North Island Main Trunk Railway, which was handed over to the Railway Department for regular working on 15th February last.

"The total expenditure on railway-works last year amounted to £1,349,110, which was £69,301 in excess of the previous year's total. The particulars are as under:—

	£
Construction of new lines—	
Public Works Fund	713,121
Waikaka Branch Railway Account	13,391
State Coal-mines Account	24,984
Additions to open lines	389,672
Hutt Railway and Road Improvement Account	66,408
Railways Improvements Authorization Act Account	141,534
Total	£1,349,110



PLAN OF SPIRAL AT ARLINE CREEK, ON NORTH ISLAND MAIN TRUNK

"I will now refer more in detail to the several railways that have been in hand, and the proposals of the Government in regard to each for the current year.

"*Kawakawa-Grahamtown.*—The work of closing up the gap between Kawakawa at the north and Hukerenui at the south end has been vigorously proceeded with throughout the year. The whole of the formation that is not already finished is well in hand and nearing completion. The laying of the rails at the south end has been extended to about a mile beyond Towai, and rail-laying has now been resumed at the north end, and is steadily working southwards. A connection between the north and south ends of the line should be effected before next winter.

"Some further work has also been done on the extension from Whangarei to Grahamtown, and a contract has been entered into for the construction of the deep-water wharf at the latter place. The date fixed for the completion of this contract is 25th February, 1911.

"The expenditure last year amounted to £32,616, and for the current year a vote of £40,000 is proposed. (Main line 58 miles; open 30 miles.)

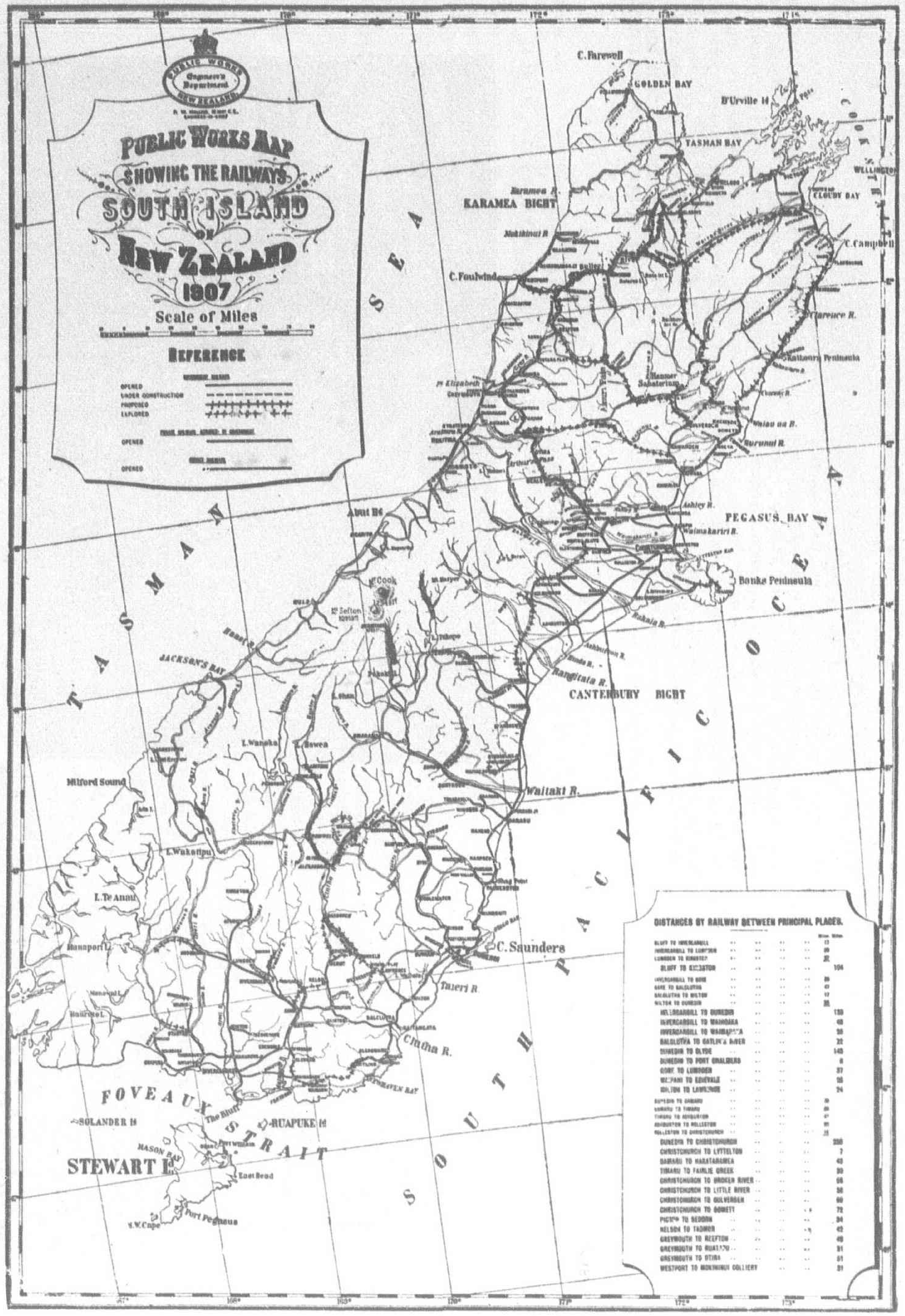
"*Kawakawa-Kaikohe.*—A short branch line has already been constructed from the Kawakawa-Grahamtown Railway at Scoria Flat to a good scoria deposit in the vicinity, which has been, and still is, used as a ballast-pit. Owing to a strong demand for an extension of the railway towards Hokianga, a flying survey has been undertaken from the end of this ballast-pit line to Kaikohe and Hokianga Harbour. A railway along this route, in addition to opening up much fertile country in the Hokianga district, would also afford a valuable connection between the Kawakawa-Grahamtown Railway and the North Auckland trunk line when the latter is extended as far as this. The immediate construction of the line between Scoria Flat and Kaikohe is fully justified, as not only would the railway itself be a profitable undertaking, but it would also cheapen and expedite the construction of the North Auckland Railway. It is therefore proposed to provide for the construction of this railway in the Railway Authorization Bill of the present session, and a vote of £2,500 to make a commencement with the work is provided on the estimates.

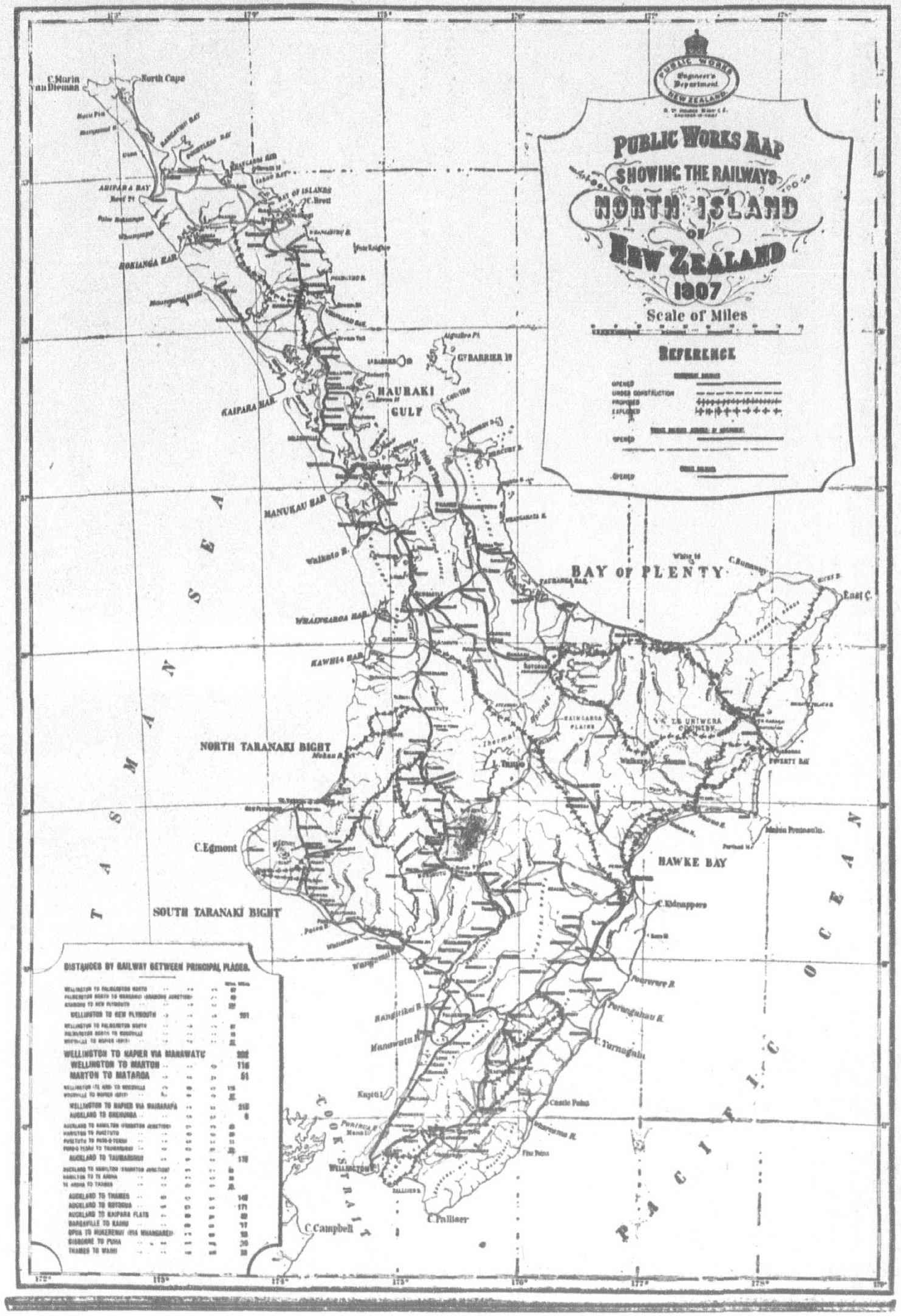
"*North Auckland.*—This railway has in previous years been referred to as the Helensville Northwards line. While that title was quite suitable when an extension of only a few miles northwards of Helensville was contemplated, it is scarcely the most appropriate designation to apply to the line, which is now intended to traverse the whole of the North Auckland Peninsula—hence the new title.

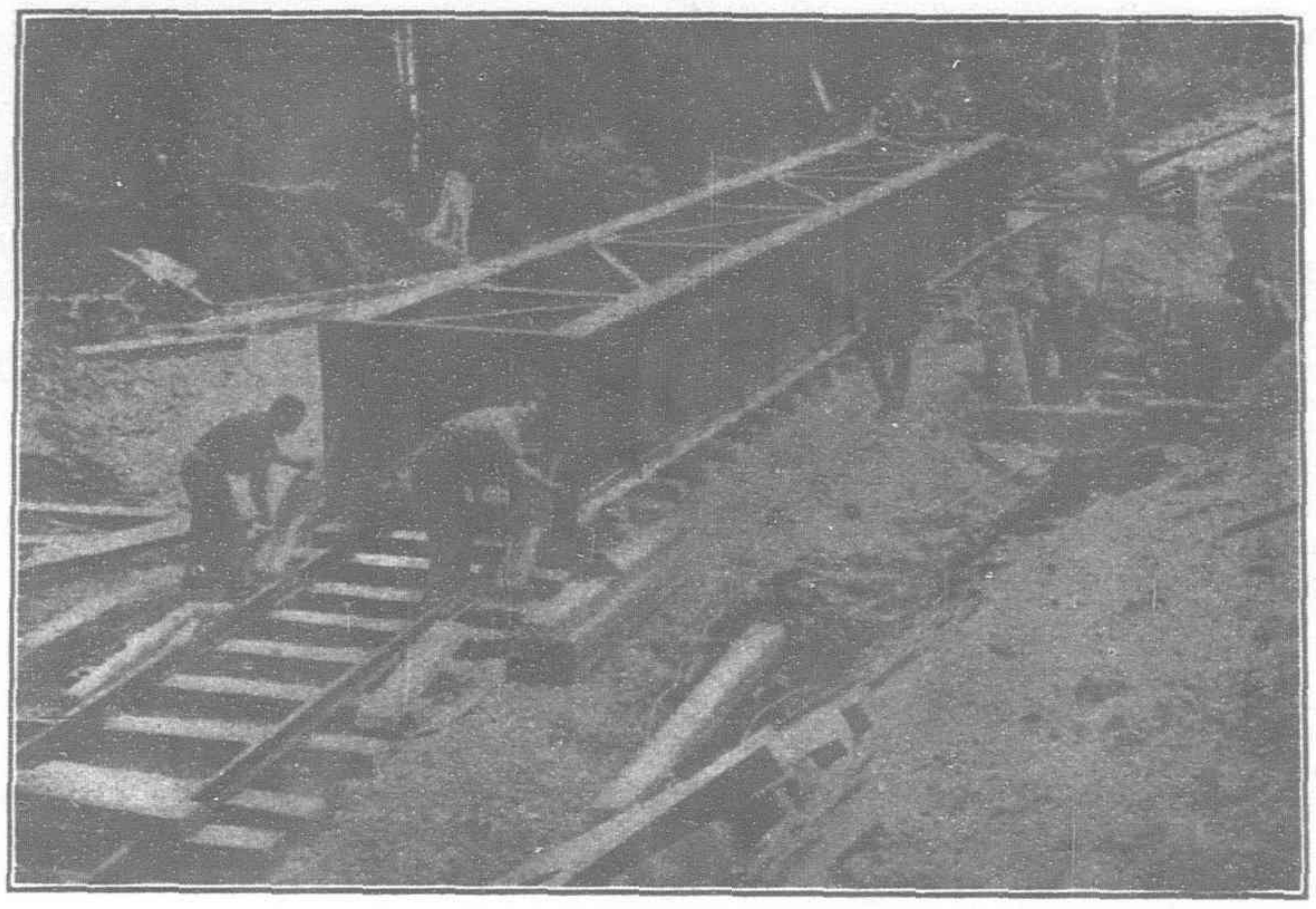
"A large number of petitions were presented to Parliament last session praying for a westerly deviation of the railway, and the Public Petitions Committee recommended that exhaustive surveys of the rival routes should be made. In pursuance of this recommendation further surveys have been undertaken, and in February last I made a personal examination of the ground, in company with the Engineer-in-Chief of the Department, the members for the three adjoining electorates, as well as the member for Manukau and one of the members for Auckland City, and a number of other gentlemen locally interested. As a result of my inspection, and after careful inquiries into the matter made locally, and after my return to Wellington, I came to the conclusion that the demand for a more westerly route was well grounded. The question was subsequently carefully considered in Cabinet, when it was decided that a more westerly route, as far as McCarroll's Gap, should be adopted. A detailed survey of a considerable portion of this route has since been completed; the balance is in hand, and construction-work on the deviation has already been commenced. It will now be possible to employ a larger number of men, so that better progress will be made in the future than has been the case during the last two or three months.

"The making of this deviation will render it necessary to obtain a re-authorization of the line from near Maungaturoto to McCarroll's, and provision for this will be made in the Railways Authorization Bill. As regards the extension of the line northwards from McCarroll's, it is proposed to appoint a Royal Commission to sit during the recess to take evidence as to the best route to be adopted, and the report of the Commission will be laid before Parliament next session.

"The section between Wayby and Wellsford, which was approaching completion when last


Public Works Department Engineer's Department New Zealand
PUBLIC WORKS MAP
SHOWING THE RAILWAYS
SOUTH ISLAND
OF
NEW ZEALAND
1907
Scale of Miles
REFERENCE
OPENED
UNDER CONSTRUCTION
PROPOSED
EXPLORED
C. Farewell
GOLDEN BAY
D'Urville Id
TASMAN BAY
KARAMEA BIGHT
C. Foulwind
CLOUDY BAY
C. Campbell
Hanmer Sanatorium
PEGASUS BAY
Banks Peninsula
Mt Cook
CANTERBURY BIGHT
Waitaki R.
TASMAN SEA
Jackson's Bay
Milford Sound
L. Wanaka
L. Wakatipu
L. Te Anau
C. Saunders
Clutha R.
FOVEAUX STRAIT
SOLANDER Is
RUAPUKE Id
STEWART I.
SOUTH PACIFIC OCEAN
COOK STRAIT
DISTANCES BY RAILWAY BETWEEN PRINCIPAL PLACES.

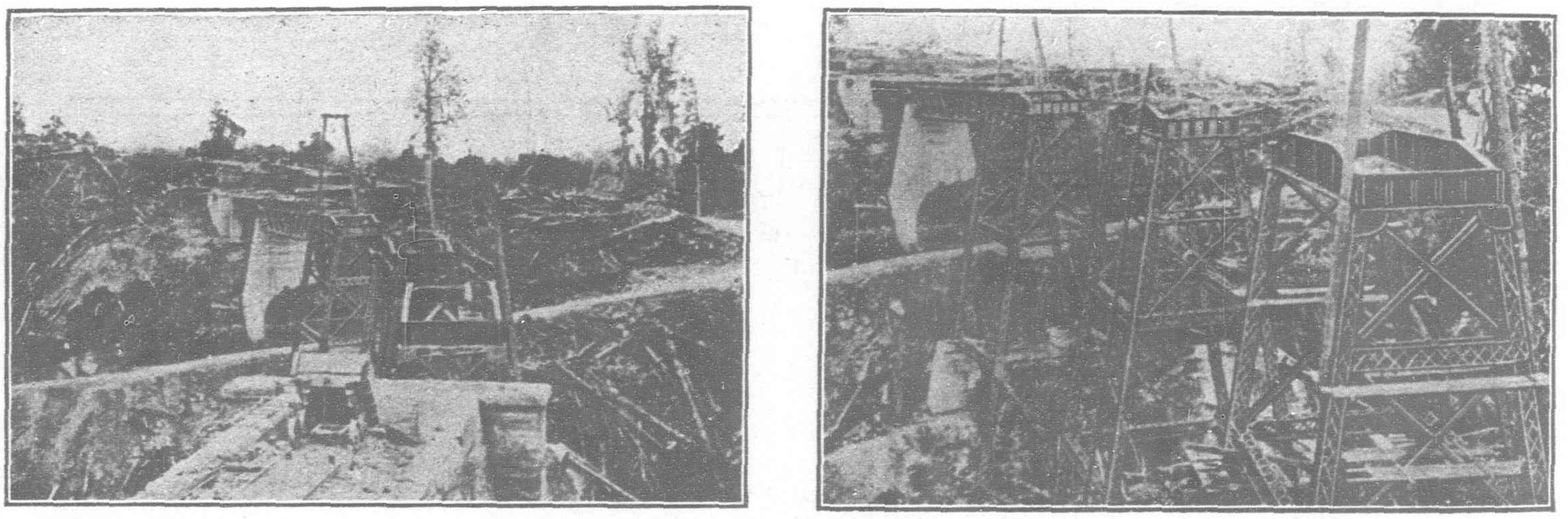

Public Works Department Engineer's Department New Zealand
PUBLIC WORKS MAP
SHOWING THE RAILWAYS
NORTH ISLAND
OF
NEW ZEALAND
1907
Scale of Miles
REFERENCE
OPENED
UNDER CONSTRUCTION
PROPOSED
EXPLORED
C. Maria van Diemen
North Cape
HOKIANGA HAR.
Gt BARRIER Id
HAURAKI GULF
KAIPARA HAR.
MANUKAU HAR.
BAY OF PLENTY
East C.
NORTH TARANAKI BIGHT
C. Egmont
SOUTH TARANAKI BIGHT
HAWKE BAY
Mahia Peninsula
C. Kidnappers
C. Turnagain
Castle Point
C. Palliser
C. Campbell
Wellington
TASMAN SEA
PACIFIC OCEAN
COOK STRAIT
DISTANCES BY RAILWAY BETWEEN PRINCIPAL PLACES.



NORTH ISLAND MAIN TRUNK RAILWAY.—BRIDGE OVER PIOPIOTEA RIVER. LAUNCHING A 44 FEET PLATE GIRDER SPAN

year's Statement was delivered, has since been finished, and was handed over to the Railway Department on the 1st April last. The line between Wellsford and Kaiwaka is well forward, the rails having already been laid and goods traffic undertaken as far as Te Hana, and the formation to Kaiwaka is in an advanced condition. Good progress has also been made with the extension of the survey northwards.

"The expenditure on this railway last year amounted to £50,983, which was nearly double that of the previous year. For the current year a vote of £80,000 is proposed. (Main line, 106 miles; open, 30 miles.)



TAONUI VIADUCT ON THE NORTH ISLAND MAIN TRUNK RAILWAY. THIS VIADUCT IS BUILT ON A 10-CHAIN CURVE; GRADE 1 IN 66; ONE 36 FT. SPAN, FOUR 64 FT. SPANS AND THREE PIER-HEAD SPANS OF 36 FEET ON STEEL PIERS; 112 FEET FROM RAIL-LEVEL TO BED OF STREAM

"*East Coast Main Trunk.*—The trial survey for a railway between Waihi and Tauranga, which was in hand last year, has since been completed. The survey was also carried on as far as Matata.

"The Government is strongly impressed with the necessity for a trunk railway through the important Bay of Plenty district, and that will eventually connect Auckland with Gisborne and the whole of the East Coast settlements, and considers that the time has now arrived to make a commencement with the work. It is, therefore, proposed to include the section of the line between Tauranga and Te Puke in the Schedule to the Railways Authorization Bill of the current year.

"If the Bill is duly passed by Parliament, arrangements will be made to commence construction-works as soon as possible after the termination of the session.

"At the Gisborne end of this line the bridge over the Waikohu River was completed, and the line extended from the temporary stopping-place on the south side of the river to the permanent station on the north side on 1st April last. A very large amount of formation-work has been done beyond Waikohu, which is the heaviest section of the line between Gisborne and Motu, and includes the Waihuka tunnel. The rails have also been laid for three or four miles, and ballasting is in hand. Plans for the steel viaduct at Otoko have been prepared, and tenders for its construction will shortly be invited.

"Last year's expenditure amounted to £40,601, which is the largest sum spent on the line in any one year since its construction was commenced. Having in view the importance and urgency of the railway, and the proposal to commence the new section between Tauranga and Te Puke, it will be necessary to expend a still larger sum during the current year, and a vote of £80,000 is therefore asked for.

"*Stratford Main Trunk.*—Work has been vigorously proceeded with throughout the year at the Stratford end of this railway, and the section between Huiroa and Te Wera is now approaching completion. The construction of the Pohokura section is also well in hand, the first four miles being almost finished, and the whole section will probably be completed in eight or nine months. Work on the Whangamomona section has also been commenced. This railway now taps the main arterial road of the district, and will consequently be of very great benefit to the settlers.

"The expenditure last year amounted to no less than £43,071, which is the largest amount spent on the line in any year since the work was started. A much larger expenditure is anticipated during the present year, however, and a vote of £60,000 is proposed for the work.

"*Mount Egmont Branch.*—Mention was made in last year's Statement of the first section of this railway, including the crushing-station at Manganui, having been completed and handed over to the Railway Department. It was also stated that it was proposed to extend the railway to the site of a permanent quarry on the slopes of Mount Egmont, at the head of the Waingongoro River. Further exploration and survey has, however, shown that this quarry would probably not turn out so satisfactorily as one to be obtained at the head of the Manganui River, although to approach the latter an incline-tramway will be needed. The necessary surveys are in hand, and as soon as they are completed the work of construction will be proceeded with, as the stone-crushing plant cannot be worked to the best advantage until a permanent supply of solid stone has been opened up.

"Only a comparatively small expenditure was incurred last year—viz., £2,738. A vote of £5,000 is provided for the current year.

"*North Island Main Trunk.*—When my predecessor delivered his Statement last year, a train had been run between Wellington and Auckland and back—namely, on the occasion of the visit of the American Fleet. This was quite a 'special' train, however, and special arrangements had to be made in order to get it through, as a portion of the line had only very recently been laid and many miles of it were entirely unballasted. Since that date the line has been completed and handed over to the Working Railways Department, and regular through trains have been run since the 15th February last.

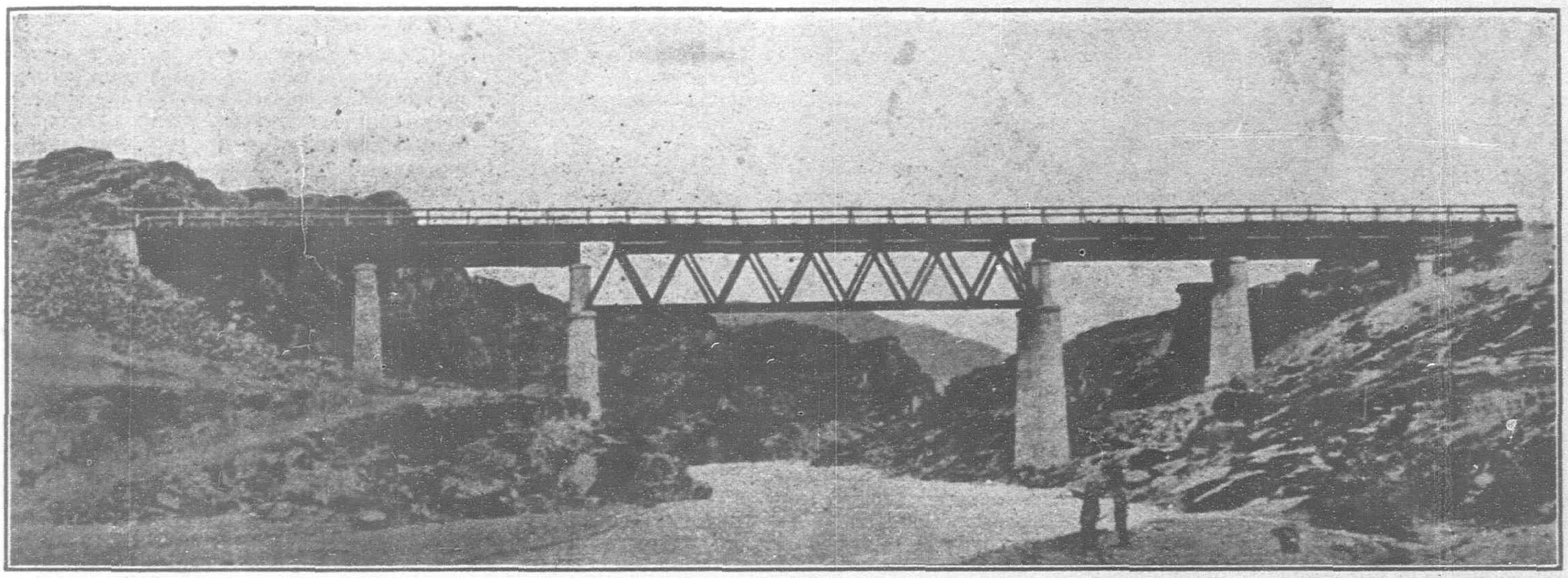
"The vote of £225,000 taken on last year's Appropriations proved to be in excess of requirements. Only £140,833 came to charge during the year, but as a number of liabilities remained on 31st March last, a vote of £20,000 is provided on the present estimates to cover same.

"*Blenheim-Waipara.*—At the northern end, the section between Seddon and Blind River has been completed, and goods traffic is being carried over it by the Public Works Department for the convenience of settlers. The further section to Ward, which is as far as the railway is authorized at present, is also approaching completion. To enable the construction of this line to be continued it will be necessary to obtain authority to take another section in hand, and provision will accordingly be made in the Railways Authorization Bill for a further length of three miles and a quarter.

"At the south end the formation has been completed to Mina Station, near Mackenzie Township, which is as far as the line is authorized at present, and rail-laying has been started. A contract has also been let for the important combined road and railway bridge over the Waiau River. This bridge will be 2,312 ft. in length, and is to be completed by 19th November next. The contract sum is £20,467. It is desirable that the extension of this line, at any rate as far as the bridge, and to a convenient station-site beyond it, should be authorized, and provision for this will be made in the Railways Authorization Bill.

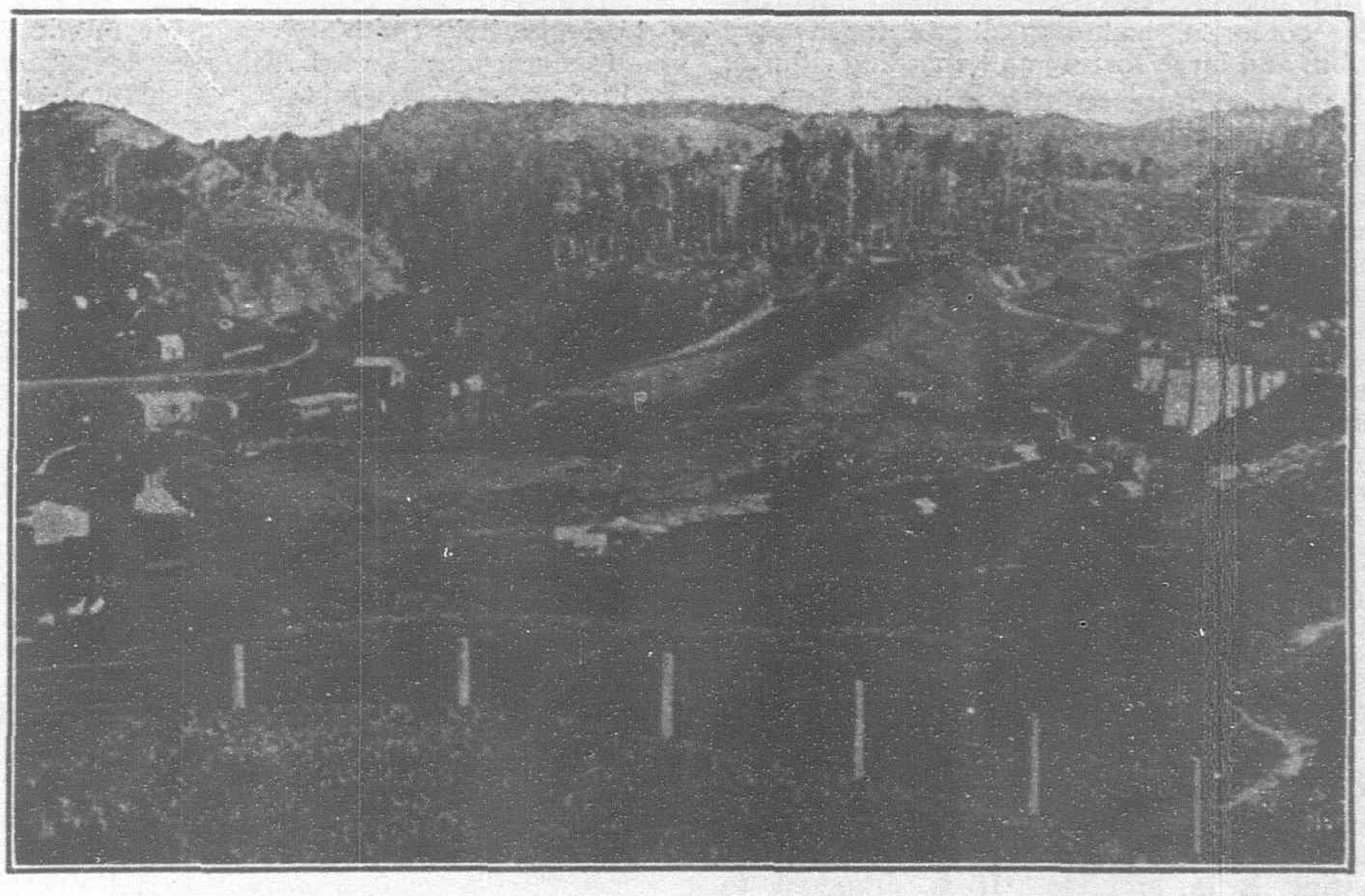
"The expenditure on the whole railway last year amounted to £36,761, and for the current year a vote of £45,000 is proposed.

"*Midland.*—At the Nelson end of this railway the section between Tadmor and Kiwi, which was nearly finished when last year's Statement was delivered, has since been completed and handed over to the Railway Department, and the section between Kiwi and Tui is now approaching completion, the rails being laid as far as the north end of the Tui station-yard. The further section between Tui and Hope Junction authorized last year has beent aken in hand and satisfactory progress made with it. I am in hopes that this section will be complete and ready for traffic about the end of the summer of 1911, at which date it is probable that the Reefton-Inangahua Railway will be completed to Inangahua Junction, thus reducing the coach journey between Nelson and the West Coast to about fifty-two miles, and enabling the through journey between Nelson and Greymouth to be accomplished in one day.



OTAGO CENTRAL RAILWAY.—COMBINED ROAD AND RAILWAY BRIDGE OVER THE MANUHERIKIA RIVER AT ALEXANDER

"At the Reefton end of the line good progress has been made with the section between Cronadun and the Inangahua Landing. The larger bridges are finished, the earthworks are nearing completion, and rail-laying will be resumed shortly. The short section between the Landing and the Inangahua Junction will be taken in hand without delay, and every effort made to have the railway completed to that point by about February, 1911.



HORSE-SHOE CURVE NEAR TURANGARERE ON THE NORTH ISLAND MAIN TRUNK RAILWAY DESCRIBES THREE QUARTERS OF A CIRCLE

"On the Canterbury-Westland Section of the railway very important works are in hand, and considerable progress has been made during the year. The chief work, of course, is the summit tunnel at Arthur's Pass, for which a contract was let to Messrs. John McLean and Sons, in August, 1907. Considerable progress has been made with this work, the "heading" having now been excavated for a total distance of about a mile. Enlarging to full size is also in hand, and the concrete lining is following up. It is evident, however, that progress in the future must be much greater than hitherto if the contract is to be completed by the date stipulated—namely, 1st August, 1912.

"At the Canterbury end of the line, Mr. Fraser's contract for the steel viaduct over Sloven's Creek has been completed, and rail-laying resumed. The formation being practically finished as far as the Cass, there will be nothing to prevent the rails being laid to that point without interruption. As soon as the line to the Cass is ready for traffic it will be handed over to the Railway Department for regular working, thus shortening the coach journey between the east and west coasts to about twenty-five miles, and making the performance of the through journey in one day quite an easy matter, even during the winter months.

"The expenditure on the whole railway last year amounted to £124,402, and for the current year a vote of £170,000 is asked for, made up as under:—

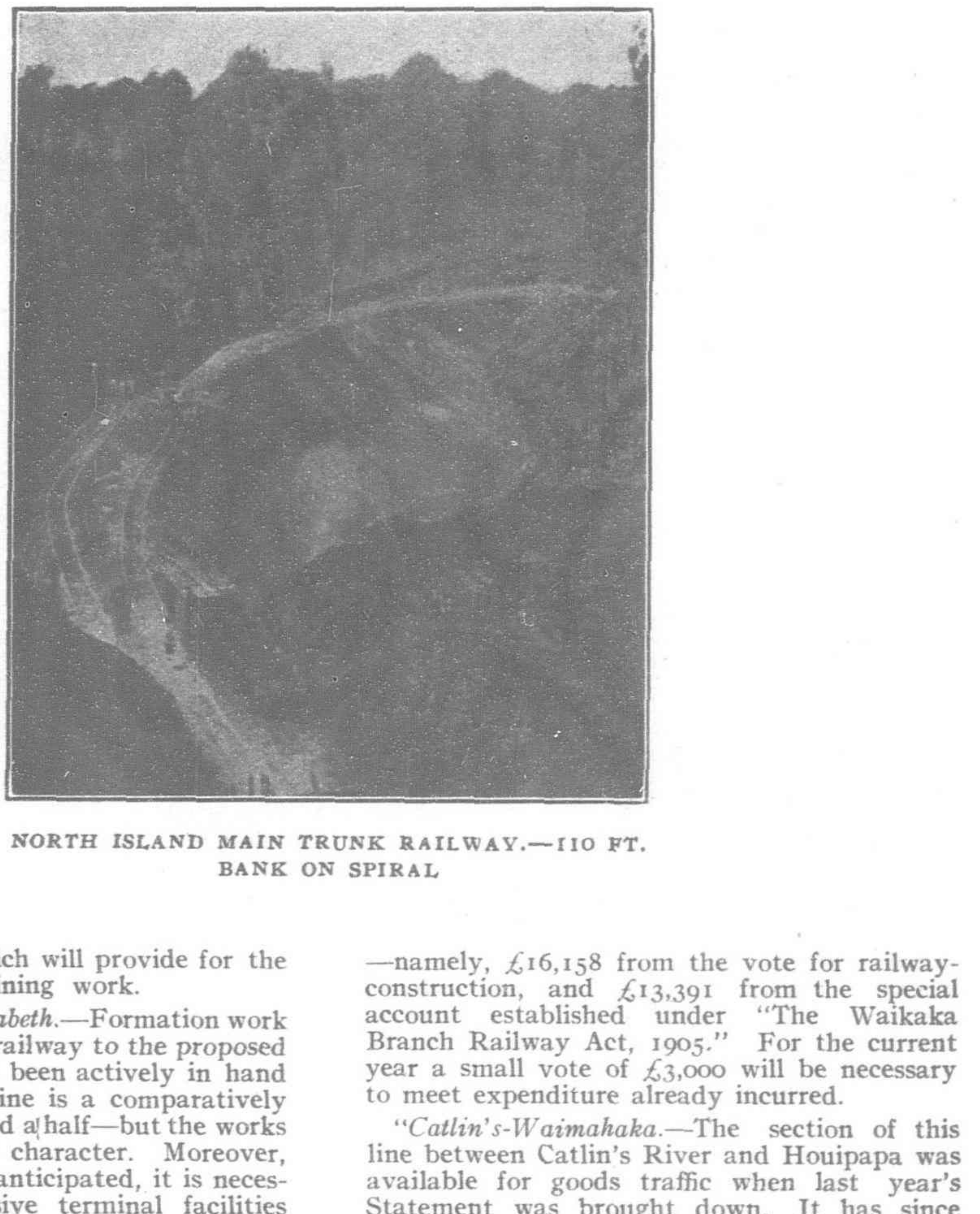
	£
Nelson-Inangahua Section..........	25,000
Reefton-Inangahua Section.........	15,000
Otira Station to Tunnel Section.....	5,000
Arthur's Pass Tunnel Section.......	65,000
Broken River to Baeley Section.....	60,000
Total..................	£170,000

"*Westport-Inangahua.*—The section of this railway between Westport and Kuha, 5 miles 60 chains in length, is nearly finished. It would have been completed earlier but for the delay which took place in the completion of the contract for the erection of the bridges. The felling of the bush on the second section, which is almost entirely in the Buller Gorge, is nearly finished, and formation work commenced. The work is of such a character, however, that it can be carried out more advantageously in small contracts than under the co-operative system, and it is consequently proposed to shortly invite tenders for its construction in short sections.

Last year's expenditure totalled £8,567, but a vote of £20,000 is proposed for the current year.

"*Ngahere-Blackball.*—A considerable amount of work has been done on this railway during the year, and the line is now approaching completion. An extensive coal traffic is already being carried by the Public Works Department for the convenience of the Blackball and Paparoa Coal Companies. This traffic considerably impedes the completion of the line, but the work is expected to be finished and handed over to the Railway Department early in the new year.

"The expenditure during last year amounted to £33,804. For the current year a vote of £30,000 is proposed, which will provide for the completion of all remaining work.



NORTH ISLAND MAIN TRUNK RAILWAY.—110 FT. BANK ON SPIRAL

"*Greymouth-Point Elizabeth.*—Formation work on the extension of this railway to the proposed No. 2 State Colliery has been actively in hand during the year. The line is a comparatively short one—three miles and a half—but the works upon it are of a heavy character. Moreover, as a large coal traffic is anticipated, it is necessary to provide extensive terminal facilities at the collieries, including a site for a very large bin and large sorting and standing sidings.

"The expenditure on this railway last year (£24,984) was charged to the State Coal-mines Account, but it is considered inadvisable to allow the amount to remain at the debit of that account, and it is therefore proposed to provide in this year's Appropriation Bill for the transfer of last year's expenditure from the State Coal-mines Account to the Public Works Fund, and also to make special provision for the estimated expenditure of the current year, which will probably amount to nearly £50,000.

"*Hokitika-Ross.*—The fina section of this railway was opened for traffic on the 1st April last.

"The expenditure during the year amounted to £14,298. Sundry minor finishing works remained to be executed after the line was handed over, however, and a vote of £4,000 appears on the estimates to cover these.

"*Lawrence-Roxburgh.*—The construction of this line, between Lawrence and the Big Hill Tunnel has been proceeded with during the year. The formation is practically finished, and the rails are laid for the greater part of the distance, and ballasting is in progress. It is proposed to complete the section to Big Hill, and to open it for traffic as soon as it is ready. The question of carrying the work on beyond that point, however, is one that requires careful consideration. The Government is at present unable to see its way to take any further steps in the matter unless an adequate guarantee is forthcoming that reasonable interest on the capital invested will be returned.

"Last year's expenditure on the railway amounted to £14,076, and for the current year a vote of £12,500 is provided.

"*Gore-Waikaka.*—This line was handed over to the Railway Department on 26th November, 1908, or a little earlier than anticipated in last year's Statement. It was not quite finished at that date, but the various unfinished works have been completed since.

Last year's expenditure amounted to £29,549—namely, £16,158 from the vote for railway-construction, and £13,391 from the special account established under "The Waikaka Branch Railway Act, 1905." For the current year a small vote of £3,000 will be necessary to meet expenditure already incurred.

"*Catlin's-Waimahaka.*—The section of this line between Catlin's River and Houipapa was available for goods traffic when last year's Statement was brought down. It has since been entirely completed, and the Public Works stone-crushing and ballasting plant removed further on. The section was handed over to the Railway Department for regular working in the early part of the present month.

"The earthwork on the Papatupu section is practically completed, and platelaying and ballasting well in hand. A great deal of work has also been done on the Table Hill section, but, being of a heavy character, it will still be some little time before it is finished.

"At the Waimahaka end of the line a large amount of work has been done. The number of men has been considerably increased. The authorization of the line at this end is about a mile and a half short of the terminus at present proposed, and provision for the necessary amendment in the Act to authorize the remaining distance is made in this year's Railways Authorization Bill. The same Bill will also provide for an extension at the Catlin's end of the line—namely, to the confluence of the McLennan and Tahakopa Rivers.

"The expenditure on the whole railway during the last financial year was £35,091, and for the current year an appropriation of £80,000 is asked for.

"*Riversdale-Switzers.*—Excellent work was done on this railway during the year. When last year's Statement was delivered only two miles of rails had been laid, and about eight miles of formation was in an advanced condition. The whole line—fourteen miles in length—has since been completed, and was handed over to the Railway Department for regular traffic on the 1st October last.

"The expenditure during the year amounted to £20,478, and a vote for £20,000 will be necessary this year in order to clear accounts.

"*Orepuki-Waiau.*—On this line also very good work was done last year, the railway having been completed and the line opened for traffic on 1st October last.

"The expenditure during the year amounted to £15,846, and a vote for £15,000 is provided on the estimates to cover the expenditure of the current year.

"*Surveys.*—A very considerable list of proposed surveys was mentioned by my predecessor in his last Public Works Statement—sufficient, it seems to me, to keep the officers likely to be available from the departmental staff busily employed for years to come. Much important survey-work was done during the past year, however, principally on the North Auckland, East Coast Main Trunk, Paeroa-Pokeno, Blenheim-Waipara, and Catlins-Waimahaka Railways. The other lines mentioned in Hon. Mr. Hall-Jones's list will receive attention as soon as opportunity offers.

"Last year's expenditure on surveys of new lines amounted to £5,462, and for the current year a vote of £2,000 is asked for.

"*Total Appropriations for Railway-construction.*—In addition to the amounts already mentioned, a vote of £100,000 is proposed for permanent-way materials, and £1,000 for old land claims and other old contingent payments on construction account. These items bring the total proposed vote for railway-construction purposes up to £790,000.

"*Other Railway-works.*—The sum of £260,731 was spent in providing rolling-stock and workshops machinery for the working railways, and £128,941 on additions to station-accommodation, wharves, signalling-appliances, interlocking, tablet working, telegraphs, and telephones, making the total expenditure under the heading of "Additions to Open Lines" £389,672.

"The Wellington-Hutt duplication has been completed and brought into use between Kaiwarra and the Hutt. Portions of the new main road for vehicular traffic are in daily use, and the construction of the other portions is ebing pushed on.

"The double line between Addington and Rolleston will shortly be ready for traffic. The double line between Newmarket and Penrose has been opened for traffic, and a large amount of construction-work has been carried out in connection with the Dunedin-Mosgiel duplication. On the Auckland side of the Parnell Tunnel one portion of the two-track railway-bridge has been brought into use, and work on the other is in hand. The expenditure during the last financial year on the works referred to was £207,942, made up as follows:—

	£
Wellington-Hutt duplication works..	53,951
New Hutt Road, including land for same..........................	12,457
Auckland-Penrose duplication works	31,005
Addington-Rolleston duplication works..........................	73,510
Dunedin-Mosgiel duplication, and deviation of line................	73,019
	£207,942

"For the current year provision has been made on the estimates to the extent of £180,602, namely:—

	£
Auckland-Penrose duplication......	5,000
Wellington-Hutt duplication........	74,602
Addington-Rolleston duplication....	11,000
Dunedin-Mosgiel duplication........	90,000
	£180,602

"The amount proposed to be voted for the current year for 'Additions to Open Lines' is £350,000, of which £250,000 is for new rolling-stock and additional workshops machinery."

FAR EASTERN COMPANY REPORTS

The Hongkong and Shanghai Banking Corporation.—The following is the eighty-ninth report of the Court of Directors covering the six months ended December 31st, 1909, submitted to the Proprietors of the Hongkong and Shanghai Banking Corporation:

Gentlemen,—The directors have now to submit to you a general statement of the affairs of the bank and balance sheet for the half-year ending 31st December, 1909.

The net profits for that period, including $2,001,819.19, balance brought forward from last account, after paying all charges, deducting interest paid and due, and making provision for bad and doubtful accounts, amount to $5,307,941 43.

The directors recommend the transfer of $250,000 from the profit and loss account to credit of the silver reserve fund, which fund will then stand at $15.500,000.

After making this transfer and deducting remuneration to directors there remains for appropriation $5,042,941.43, out of which the directors recommend the payment of a dividend of two pounds sterling per share, viz., £240,000, and a bonus of five shillings sterling per share, viz., £30,000, amounting in all to £270,000 which at 119½, the rate of the day, will absorb $3,013,953.49.

The balance $2,028,987.94 to be carried to net profit and loss account.

Branches and Agencies.—Sub-agencies of the Bank have been opened at Hongkew (Shanghai), Malacca (Straits Settlements), and Kuala Lumpur (Federated Malay States).

Directors.—Mr. H. E. Tomkins has been elected chairman for the year 1910, and Mr. G. Balloch deputy chairman.

Mr. H. A. W. Slade and Mr. W. Helms having resigned their seats on leaving the Colony, Mr. G. Balloch and Mr. F. Lieb have been invited to fill the vacancies; these appointments require confirmation.

Mr. C. R. Lenzmann, Mr. H. E. Tomkins and Mr. C. S. Gubbay retire in rotation, but being eligible for re-election, offer themselves accordingly.

Auditors.—The accounts have been audited by Mr. W. Hutton Potts and Mr. J. W. C. Bonnar, who offer themselves for re-election.

W. J. Gresson,
Chairman.

Hongkong, 8th February, 1910.

Abstract of assets and liabilities, Hongkong and Shanghai Banking Corporation, 31st December, 1909:—

LIABILITIES.

Paid-up capital		$15,000,000.00
Sterling reserve fund £1,500,000 at ex. 2/-		15,000,000.00
Silver reserve fund		15,250,000.00
Marine insurance account		250,000.00
Notes in circulation:—		
(Anthorized issue against securities and coin deposited with the Crown agent for the colonies and their trustees)	$15,000,000.00	
Additional issue authorized by Hongkong ordinances against coin lodged with the Hongkong Government	30,188.00	
		15,030,188.00
Current accounts:—		
Silver	$97,460,231.04	
Gold £5,422,164 18s. 6d=	60,513,280.03	
		157,973,511.00
Fixed deposits:—		
Silver	$63,225,257.13	
Gold £4,586,318 6s. 5d.=	51,191,676.19	
		114,446,933.32
Bills payable (including drafts on London bankers, call loans and short sight drawings on London office against bills receivable and bullion shipments)		21,480,773.00
Profit and loss account		5,307,941.43
Liability on bills of exchange rediscounted, £4.500,388 9s. 5d. of which £3,010,659 13s. 4d. have since run off		$359,739,348.82

ASSETS.

Cash		$49,624,147.34
Coin lodged with the Hongkong Government against authorized and/or excess note circulation		13,000,000.00
Bullion in hand and in transit		6,487,602 55
Indian Government rupee paper		2,419,349.51
Consols, colonial and other securities		14,881,698.82
Sterling reserve fund investments, viz:—		
£1,208,000 2½ per cent. consols at 82	£990,560	
(of which £250,000 lodged with the Bank of England as a special London reserve).		
£255,000 2¾ per cent., national war loan at 90	229,500	
£325,000 other sterling securities, written down to	279,940	
	£1,500,000 at ex. 2/=	15,000,000.00
Bills discounted, loans and credits		108,502,308 88
Bills receivable		147,889 789.11
Bank premises		1,934,450.61
		$359,739,346.82

GENERAL PROFIT AND LOSS ACCOUNT.

31st December, 1900.

Dr.

To amount written off:—remuneration to directors			$15,000.00
To dividend account:—			
Dividend £2 per share on 120,000 shares=£240,000 at 1/-9½=	2,679,069.77		
Bonus 5/- per share on 120,000 shares =£30,000 at 1/-9½=	334,883,72		
			$3,013,953.49
To transfer to silver reserve fund.			250,000.00
To balance forward to next half-year			2,028,987.94
			$5,307,941.43

Cr.

By balance of undivided profits, 30th June, 1909	$2,001,819.19	
By amount of net profits for the six months ending 31st December, 1909, after making provision for bad and doubtful debts, deducting all expenses and interest paid and due	$3,306,122.24	
		$5,307,941.43
		$5,307,941.43

STERLING RESERVE FUND.

To balance, £1,500,000 at ex. 2/- (invested in sterling securities.)	$15,000,000.00
	$15,000,000.00
By balance 30th June, 1909, £1,500,000 at ex. 2/-	$15,000,000.00
	$15,000,000 00

SILVER RESERVE FUND.

To balance	$15,500,000.00
	15.500,000.00
By balance 30th June, 1909	$15,250,000.00
By transfer from profit and loss account	250,000.00
	$15,500,000.00

The Kanegafuchi Cotton Mill.—For the half year a dividend of 14% per annum was declared.

The China and Manila Steamship Company, Ltd.—The following report of this company to be presented at the twenty-seventh general meeting is to the effect that the profit on working for the year ending 31st December, 1909, is $26,941.54 and after payment of interest and other charges there remains a debit balance of $3.777.33 to be carried forward to next year's account.

The s.s. Rubi and Zafiro have kept up the service without intermission and are in first class order and condition.

Mr. A. V. Apcar has resigned from the consulting committee; Messrs. H. P. White and Dr. J. W. Noble retire and are eligible for re-election.

The Accounts have been audited by Messrs. W. H. Potts and A. O' D. Gourdin who are eligible for re-election.

The Hongkong and Whampoa Dock Company.—The following is the report of the directors to the shareholders of this company:

Gentlemen.—The Directors have now to submit their report, with a statement of accounts, for the half-year ended 31st December, 1909.

Balance brought forward from last half-year		$345,162.36
Less		
Loss on the current half-year's working	$23,747.04	
Cost of re-organization for half-year	9,483.40	
Directors' and auditors' fees	9,166.00	
Provision made for depreciation of stock	170,000,00	
		$212,396.44

Leaving balance to carry forward to new account, $132,765.92.

During the six months two new steamers, were completed, also twelve lighters.

New work in hand consists of rolling stock for Kowloon-Canton railway (British section), five steam launches (one being for stock), two motor boats, two oil barges, and two lighters to replace two lost in transit to Manila.

Service launches K 5 and C 2 and 3 have been sold recently and realized good figures.

The new Chief Manager and Secretary commenced duty in October and November respectively. The head office has been transferred to Kowloon Docks, and was occupied in beginning of November last.

Work on the No. 1 Dock extension makes satisfactory progress.

Directors.—Mr. W. Helms having resigned his seat on leaving the Colony, Mr. F. Lieb was invited to join the Board in his place, and this appointment now requires confirmation. Mr. S. Silverstone also resigned on leaving the Colony.

In accordance with Clauses 78 and 85 of the articles of association Sir C. P. Chater, Kt., C. M. G., and Mr. H. P. White retire by rotation, but offer themselves for re-election.

The Honorable Mr. W. J. Gresson has been re-elected chairman for 1910.

Auditors —The accounts have been audited by Mr. H. Percy Smith, F. C. A., and Mr. A. R. Lowe, C. A. (in place of Mr. H. U. Jeffries resigned). The directors recommend Messrs. Smith and Lowe for re-election.

HUMPHREYS ESTATE AND FINANCE COMPANY, LTD.—A dividend of 4.5% was authorized and a balance of $5,471 carried forward.

BANK OF BURMA, LTD.—This institution paid a dividend of 7% for the half year ended December 31st, 1909, making 14% for the year besides carrying Rs. 1,50,000 to the reserve.

BANK OF BENGAL.—This institution paid 10% per annum with a bonus of 2% besides placing Rs. 2,00,000 to reserve; Rs. 50,000 to Gratuity and Pension Fund and carrying forward Rs. 2,31,059.

BANK OF MADRAS.—A dividend of 10%; bonus 1%; Rs. 1,50,000 reserve and forward Rs. 1,72,000.

THE YALU TIMBER COMPANY.—After paying China $110,000 as her share of the profits a dividend of 7.5% was distributed.

THE SUMATRA PARA RUBBER PLANTATIONS, LTD.—This company has declared a dividend of 3d. per share.

YOKOHAMA ENGINE AND IRON WORKS.—During the half year this company sustained a loss of yen 12,000 owing to business depression and reduced the balance to credit to yen 27,600.

THE GRAND HOTEL LTD.—This company paid a dividend of 2.50 yen per share for the year.

THE BENGUET CONSOLIDATED MINING COMPANY.—The following is the report of the directors for the year 1909:

Assets:		
Mine	₱199,411.74	
Mill	101,610.33	
Mcls. Buildings	6,421.19	
Furniture & Fixtures	1,608.88	
Fire System	1,374.52	
Inventory	15,196.56	
Cash in Bank	292.26	
Accts. Receivable	3,357.10	
Shortage Claim Acct.	208.10	₱329,480.68
Liabilities:		
Stock	₱214,657.84	
Accts. Payable	12,590.42	
Profit & Loss	102,232.42	₱329,480.68

Note:—The value of the above property accounts is that shown by the books of the company, without any deductions being made for damage done by the typhoon in October last.

Additions to Property Accounts during 1909:

Mine—for development.	₱20,339.96
Mill—additions	25,044.85
Mcls. Bldgs.—additions	2,428.17
Furniture & Fixtures—additions	626.13
Fire System—additions	864.75
Store & Bodega—supplies—	8,196.56
	₱57,500.42

Profit & Loss Account.

Returns from Bullion for 1909,	₱146,834.97	
Operating Expenses	82,673.00	
Net Profit for 1909	64,161.97	
Credit to Profit & Loss January 1, 1909,	38,070.45	₱102,232.42

TO THE SHAREHOLDERS:—

The storm in October carried away practically all of our milling plant except the stamps and power wheel. These were but slightly damaged and are now engaged in crushing the ore necessarily handled in repairing the damage to the mine. While the returns from this ore will be small, they should defray the cost of putting the mine into shape.

The future policy of the company is undetermined at present as this policy depends largely upon the report and recommendations of the mine foreman. There is more than ₱600,000 worth of ore blocked out, so it is needless to state that the company will go ahead as soon as the best method for further exploitation can be determined upon.

SAMSEN DOCK AND ENGINEERING COMPANY, LTD.—The profit for the half year ended 20th Sept. last, after allowing for depreciation, was Tcs. 14,299. From this sum the Directors proposed to pay a dividend at the rate of 12% per annum on the 50% paid up shares, Tcs. 2,402; to pay a similar dividend on the fully paid up shares, Tcs. 588; to place 5% net profit to reserve, Tcs. 714; to place 10% net profit to special reserve, Tcs. 1,429; to pay 10% net profit balance of Manager's salary, Tcs. 1,429; bonus to staff, Tcs. 485; to writing off 25% flotation expenses, Tcs. 786; to writing off 1/20th of goodwill, Tcs. 1,000, and to carry balance Tcs. 5,468 forward to next half year.

HONGKONG ROPE MANUFACTURING COMPANY, LTD.—The report for presentation to the shareholders at the twenty-sixth ordinary general meeting to be held at the office of the General Managers on Saturday 12th February, says that the balance on 31st December, 1909, at credit of profit and loss account is $89,176 50, which it is proposed to appropriate as follows:—

To place to reserve fund	$20,000.00
To pay a final dividend of $1.00 per share	60,000.00
To carry forward to the credit of next year's account	9,176 50

In accordance with the articles of association Messrs. H. P. White, D. W. Craddock, and Dr. J. W. Noble retire from the Consulting Committee but offer themselves for re-election.

The accounts were audited by Messrs. W. H. Potts and A. O'D. Gourdin, who are recommended for re-election.

THE TOKYO CREDIT COMPANY.—This company declared a dividend on December 21st for the half year term of 10 per cent.

THE YOKOHAMA FIVE PRODUCE EXCHANGE.—This company distributed a dividend of 14.8%.

THE TOKYO ELECTRIC LIGHT COMPANY.—At the regular meeting held December 23rd a dividend of 12% was declared for the term.

THE TOKYO STEEL FOUNDRY.—A dividend of 18% per annum was declared at the regular meeting for the half year.

THE OSAKA STOCK EXCHANGE.—This institution paid a dividend of 14% per annum for the half year term.

ODAWARA ELECTRIC RAILWAY COMPANY.—A dividend of 7½% was declared by this company for the half year term.

THE NISSHIN FLOUR MANUFACTURING COMPANY.—This company paid a dividend of 8%.

THE TOKYO MOUSLINE COMPANY.—A dividend of 5% was paid out of the net profits of the half year term.

THE CHINA PROVIDENT LOAN AND MORTGAGE CO., LTD.—The report of the directors of this company shows a balance to credit of profit and loss at the end of the year of $103,602.60 which they recommend distributed as follows:

To place to Reserve Fund	$1,000.00
To pay a Dividend of 80 cents per share	$100,000.00
To carry forward to the credit of next year's account	$2,602.60

MALACCA RUBBER PLANTATIONS, LTD.—Profits for the year amount to £75,000 out of which a dividend of 10% has been recommended.

THE TOKYO RAILWAY COMPANY.—The report for the half year shows a profit of Yen 119,000 out of which a dividend at the rate of 6.6% per annum was paid.

THE NISSHIM COTTON MILL.—This company authorized the payment of a dividend of 7% for the half year recently ended.

THE TOKYO COTTON MILL, LTD.—The following is the statement of accounts submitted and the recommendations approved at the half yearly meeting of the shareholders:

	yen.
Net profits	114,287
Balance brought from previous account	32,885
Total	147,172
To reserve	8,000
To bonus to officials	7,500
To pension fund for operatives	3.000
Dividend on old shares (8% per annum viz 2 yen per share)	48,000
Dividend on new shares (8% per annum viz 66 sen per share)	47,500
Carried to next account	33,152

THE TOKYO GAS COMPANY.—This company declared a dividend for the year at the rate of 13%.

THE LAOU KUNG MOW COTTON SPINNING AND WEAVING COMPANY, LTD.—Of the credit to profit and loss account of Tls. 86,905.59, the following distribution was recommended by the directors:

		Tls.
To Payment of a Dividend of Tls. 6 per share		48,000.00
" Depreciation of Mill Buildings	5,000.00	
" Depreciation of Machinery	23.596.69	
		28,596.66
To 10% Commission on Tls. 53,479.14 (being Tls. 86,905.59 less Tls. balance 4,829.76 of 1908 a/c and Tls. 28,596.69 proposed for depreciation) to the General Managers in accordance with their agreement		5,347.91
To be carried forward to the New Account		4,860 99

THE BALGOWNIE RUBBER COMPANY, LTD.—This company paid a dividend of 25% last month.

THE IMPERIAL HOTELS, LTD.—The following distribution of profits were made at the last meeting of the shareholders for the term:

	yen.
Net profits	21,438
Brought from previous term	10,159
Total	31,597
Legal reserve	2,000
Bonus to officials and others	2,843
Dividends to shareholders (6% per annum)	22,500
Carried to next term	4,954

THE EMPIRE HEMP THREAD MANUFACTURING COMPANY.—This company made the following distribution of the net profits for the last term:

	yen.
Net gains	345,691
Balance brought from previous term	7,667
Total	352,358
Legal reserve	17,500
Special reserve	25,000
Dividends to shareholders (12% per annum	288,000
Bonus to officials & others	15,000
Balance to be added to next accounts.	7,958

THE TOKYO FARMERS' AND MECHANICS' BANK. This institution paid a dividend of 10% for the term.

THE EMPIRE COMMERCIAL BANK.—The following statement was adopted and distribution made:

	yen.
Net receipts	147,883
Brought from previous term	11,517
Total	159,400
Reserve	15,000
Bonus to officials and others	8,872
Dividends to shareholders (6% per annum)	120,000
Carried forward	15,528

HONGKONG, CANTON AND MACAO STEAMBOAT CO., LTD.—The company pays a dividend of $1.26 besides writing off $100,000 for depreciation, carrying $10,000 to the insurance and forward $20,766.39.

THE HONGKONG LAND INVESTMENT COMPANY, LTD.—This company declared a dividend of $3.50 a share making $7 for the year.

THE WEST POINT BUILDING COMPANY, LTD. —This company paid a final dividend of $1.80 a share making $3.80 for the year ended December 31st, 1909.

HONGKONG LAND RECLAMATION CO., LTD— This company paid a dividend of 7% and carried forward a balance of $304,148.17 to the credit of profit and loss for the year ended December 31st, 1909.

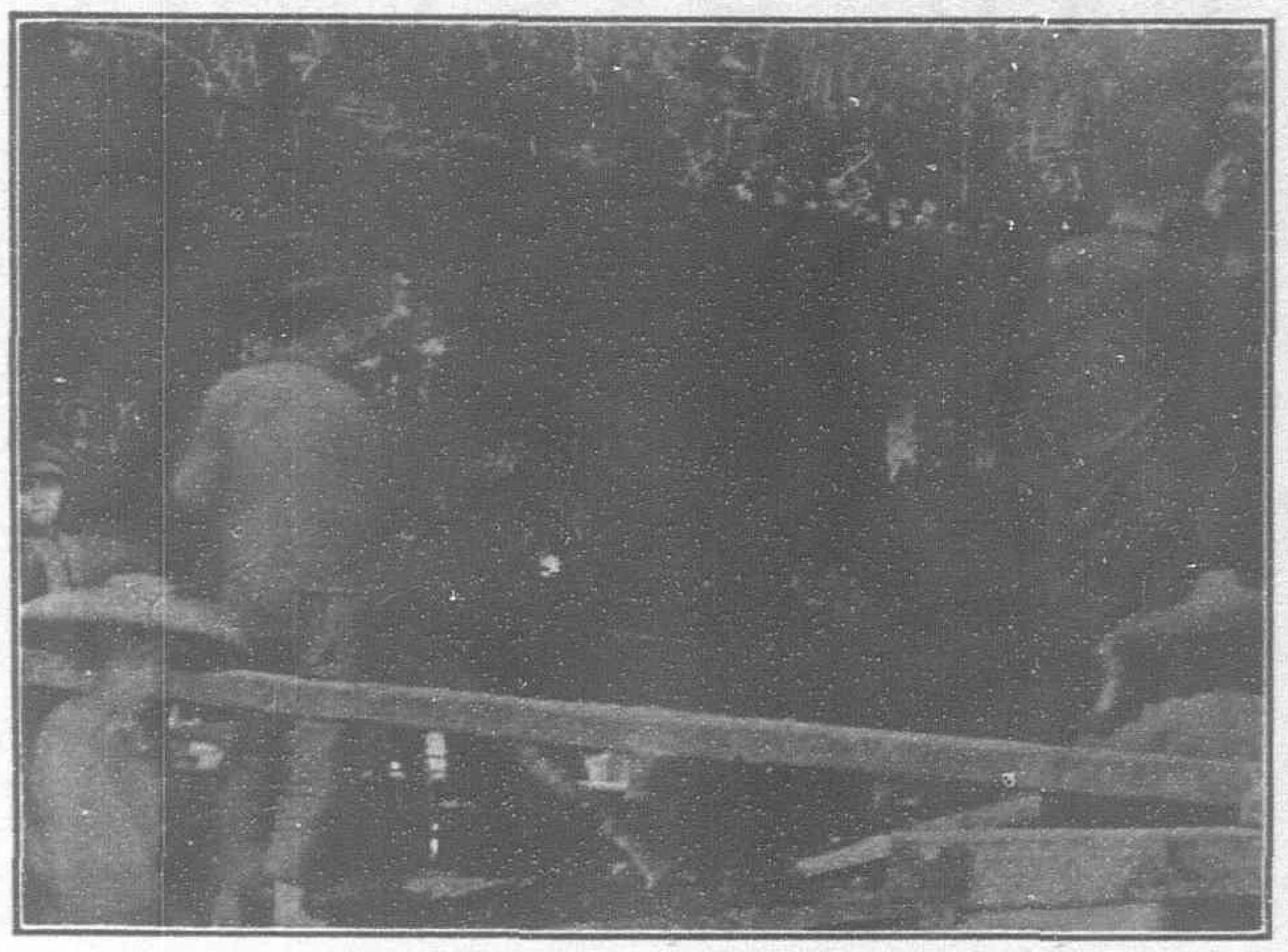
BANK OF BENGAL.—The following distribution of the net profits of this institution for the year was made at the recent meeting

In payment of a dividend at the rate of 10 per cent. per annum	Rs. 10,00,000
Bonus at 2 per cent.	4,00,000
Transferred to Reserve Fund	2,00,000
Transferred to Gratuity and Pension Fund	50,000
Carried to next half-year	2,31,058

HIGHLANDS AND LOWLANDS PARA RUBBER CO., LTD.—A further interim dividend of 7% was made payable January 17th, 1910.

THE FIFTEENTH BANK.— The following distribution was made of the profits of this institution for the last half year.

	yen.
Net receipts	961,656
Brought forward from previous accounts	724,669
Total	1,686,325
Reserve	100,000
Bonus to officials	48,000
Dividend to shareholders (9% per annum)	810,000
Carried to next account	728,325



A SMART BIT OF SALVAGE AND REPAIR WORK AT HONGKONG

The above photograph gives a comprehensive idea of the damage sustained by the S. S. Flume that recently went on the rocks in the Balabac Straits where she lay exposed for a day and a half. After being assisted to Cebu where she lay for about four months, she was sold at auction for something under ₱8,000. A smart bit of temporary repair work enabled the steamer to proceed under her own steam to the docks of the Hongkong and Whampoa Dock Company, Ltd., Hongkong, where she was placed on the slip for examination. This revealed the enormous rent as shown in the photograph. The steamer has been completely overhauled and about to be put in service again.

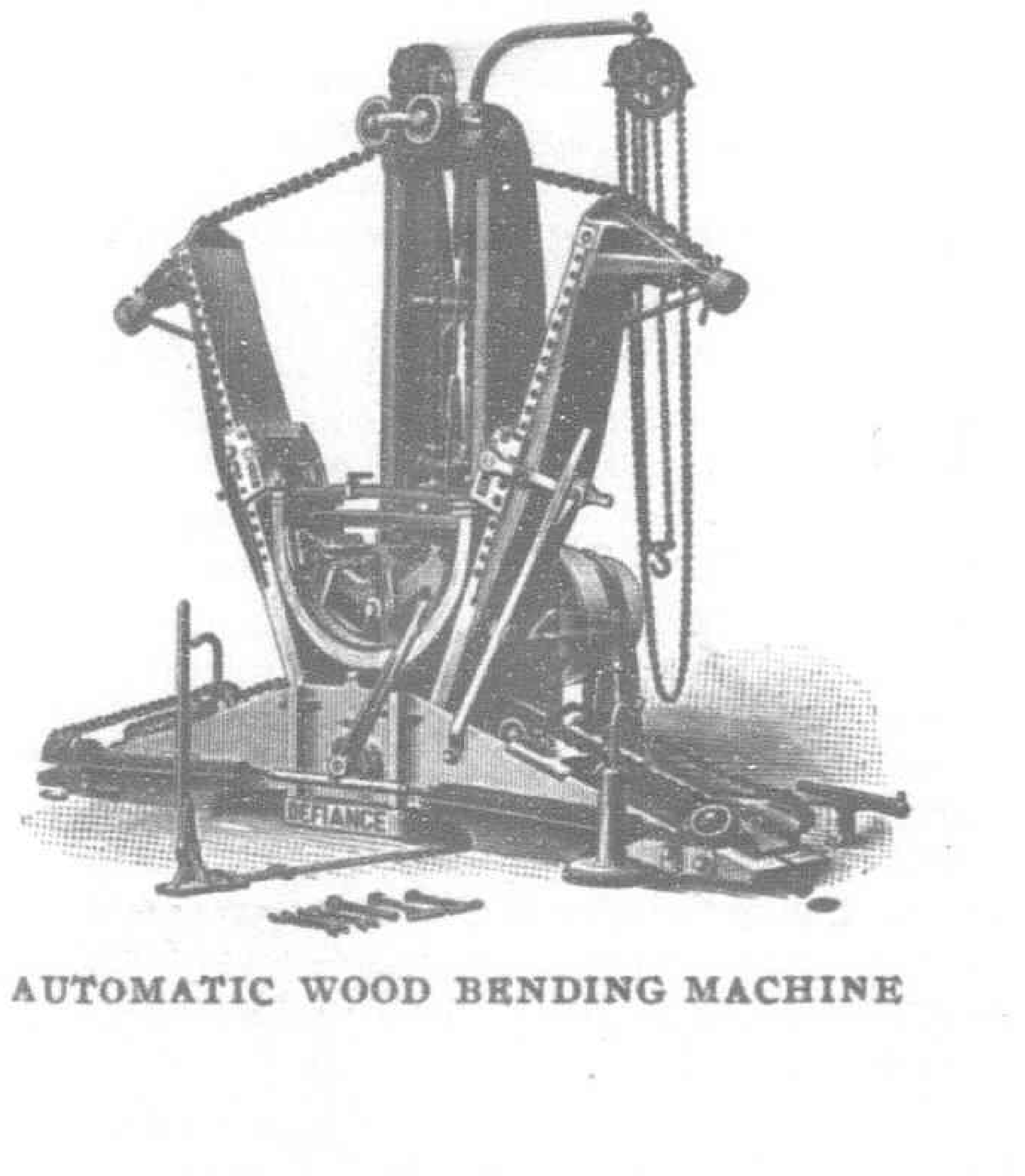
DAVAO WHARF

Among the many public improvements carried out in Mindanao under the progressive administration, the wharf at Davao is perhaps the most important since it greatly facilitates the handling of the products exported from that new colony. As is well known, Davao is surely developing into one of the most important hemp growing districts in the islands, and every year her trade almost doubles.

The appropriation made for the construction of this wharf by the Moro Government amounted to ₱60,000. It extends 810 feet into the bay giving 30 feet of water alongside at low tide thus enabling large steamers to berth conveniently. The work was under the supervision of Engineer A. T. Bienbaum. It was begun in October, 1908, and completed in the spring of 1909.

The woods used in construction, including molave, liusin, and pigau, were gotten out by the supervising engineer. As may be seen in the illustration, the first 250 feet of the wharf is stonework with sand filling.

The completion of this wharf makes Davao one of the most attractive ports in the islands and it is anticipated that, as the colony grows, it will more and more attract the shipping trade by its desirability.



AUTOMATIC WOOD BENDING MACHINE

The illustration is that of a pattern 12" Automatic Wood Bending Machine manufactured by the Defiance Machine Works of Defiance, Ohio. This machine is designed to meet all the requirements for the successful and economical bending of felloes for automobile, carriage and wagon wheels, wagon hounds, carriage bows, reaches and all other classes of bent wood work. The machine is capable of adjustment to accommodate changes from 13.5" to 72" circles and will bend felloes from those required on the lightest carriage to those for truck or artillery wheels as large as 5" thick and 12" wide. The manufacturers have provided in this machine an entirely new feature in the application of the power with the object of giving a drastic longitudinal stress upon the timber to be bent. A swinging crane with a hoist attached is furnished with each machine which aids the operator in placing the forms in and out of the machine, and when not in use may be swung out of the way. The capacity of this machine is sufficient to bend about 2,500 felloes 1.5" or about 1,200 wagon hounds in ten hours. It can be driven by one horse power engine and the floor space occupied is 172"×72"×117" high.

The advertisement of this company may be found on page 20 of the advertising section.

FAR EASTERN RAILWAYS

Half-Year Budget Estimate for the Shanghai-Nanking Railway.—The following is the budget estimate approved for the first half-year, 1910:

Receipts.	Actuals ½ yr. ended June, 1909	Estimate ½ yr. ending June, 1910
Coaching traffic earnings...	780,699	824,750
Goods " " ...	115,609	145,000
Telegraph " ...	172	250
Sundries " ...	19,567	20,000
Total Earnings.......	916,047	990,000
Add decrease or deduct increase, in balance of Traffic Account........	—2,248	—10,000
Deduct decrease, or add increase, in balance of Foreign Railways...........	—265	....
Total Receipts	913,534	980,000

Expenditure.

	Percentage on gross earnings.		
Maintenance of Way Works and Stations............	10.08	90,217	99,800
Locomotive Expenses..............	18.48	173,294	182,900
Carriage and Wagon Expenses......	5.13	39,970	50,800
Traffic Expenses....	13.49	130,263	133,500
General Charges....	15.50	152,385	153,500
Flotilla Expenses...	0.05	148	500
Special Expenses....	2.12	19,415	21,000
Total Working Expenses (III)......	64.85	605,692	642,000
Add increase or deduct decrease, in balance of Misc. Advances..............		....	....
Deduct increase, or add decrease in balance of "Demands Payable"........		—18,073	—5,000
Net Expenditure........		587,619	637,000
Net earnings...........		310,355	348,000
Net receipts............		325,915	343,000

Memorandum	*Miles.*
Number of miles open for traffic on 30th June, 1909.................	203
Opened during half-year ended 31st December, 1909..................	Nil.
Total on 31st December 1909...	203
Expected to be opened during half-year ending 30th June, 1910......	Nil.
Total likely to be open on 30th June, 1910....................	203
Train miles expected to be run during half-year ending 30th June, 1910...........................	425,0000
Cost per train mile................	$1 51

The Szechuan Tibet Railway.—Peking is again taking great interest in the construction of this line and the Boards of Finance and Posts and Communications are working on a scheme to further the enterprise. It is reported that H. E. Liu Chaun lin will be selected as Director in Chief of the line.

The Singapore-Kranji Railway.—The report for 1909 gives the information that 464,000 passengers with a revenue from this source of $181,775 and the receipts from freight traffic amounted to $34,000 making in all an increase in revenue of $39,000 over the previous year.

The Amur Railway.—The Russian government has appropriated approximately Roubles 22,000,000 for the construction of this line during the year 1910. This will guarantee construction on the main line and western and eastern extension, simultaneously.

The Tientsin Pukow Railway.—The Northern Section of this line has been completed to Chuang Chow and construction trains are utilizing the track for carrying material.

Japan Government Railways' Rolling Stock.—The Railway Board has under its jurisdiction 2,500 locomotive engines, 6,000 passenger carriages and 35,000 goods vans, and it is proposed to increase the number in each division by about 5% to meet the increased traffic.

Japanese State Railways.—The report for the first ten days of December indicate a remarkable increase of traffic. The average traffic mileage was 4,617, an increase of 83 miles compared with the corresponding period, 1908. The number of passengers was 3,012,000 which shows an increase of 622,000 compared with the figures of the previous year. The freights conveyed were 686,000 tons which show an increase of 5,000 tons. The passenger receipts were 1,014,000 *yen* showing an increase of 22,000 *yen* over the figures of the previous year, while freight receipts were 1,124,000 *yen* which shows an increase of 76,000 *yen* compared with the figures of the previous year. On the whole, there are attained favorable results. The average daily receipts are 213,000 *yen* while the average receipts per mile a day are 46 *yen* 30 *sen*.

Saigon-Hanoi Railway.—Another section of this railway was opened on December 27 and the railway is now operating from Saigon for a distance of 118 miles. The construction was very difficult as the climate is very bad and many engineering difficulties had to be surmounted.

Kirin-Changchun.—The survey of this line began from both ends the latter part of last month.

Lungchou-Nanning Railway.—A survey of this proposed railway has been ordered in view of the application of the French minister for permission to construct the line.

Dairen-Lachutan Beach Railway—A company with a capital of yen 50,000 is proposed to build a line connecting these two points.

South Manchuria Railway Debentures.—It is proposed to issue debentures to the value of yen 40,000,000 at an early date. Out of the yen 80,000,000 issued yen 60,000,000 have been expended and the balance is being utilized in the reconstruction of the Antung-Mukden Railway. By Imperial Ordinance the company is authorized to issue debentures to twice the amount of paid up shares which enables it to issue additional debentures to the amount of yen 124,000,000.

The Chinchow-Aigun Railway.—The latest advices are that the proposal made by Viceroy Hsi Liang to build a railway from Aigun on the Amur River to Kinchow on the Liaotung Gulf has been approved. The line will be 750 miles in length and extend across Manchuria. The concession is to an American company and the construction of the line will be sublet to Messrs. Pauling & Co., a British firm. The line as proposed will cross the Chinese Eastern at Tsitsihar, west of Harbin, and the Southern terminus will be a station on the Peking-Mukden line. There has been much controversy in connection with this concession, but there now seems little doubt but that it will be realized. The cost is estimated at $40,000,000.

Shanghai-Nanking Railway Shanghai Hospital.—This commodious and modern building erected for the use of railway employes only was formally opened January 21st. It is situated at 132 Range Road convenient to the railway station. It is a four-story building containing native and foreign wards, dispensary, matron's quarters, nurses' quarters, and is equipped throughout with bathrooms, dressing rooms, operating room, laundry, etc. Beside this hospital there is one each at Chinkiang, Quinsan and Soochow. Among those present at the opening who made addresses were Dr. Ziervogel, Chief Medical Officer of the Railway, Ceneral Manager A. W. U. Pope, and H. E. Taotai Chung Mung-yew.

The Shanghai-Hangchow Ningpo Railway.—There is a movement on foot to amalgamate this line with the Shanghai-Nanking Railway. This scheme is said to have the support of a large number of shareholders of the company.

Korean Railway Construction.—The new two storey railway station at Fusan is to be opened this month. It is built of brick and is one of the finest buildings of its kind in Korea.

Railway Materials Duty Free.—Imperial sanction has been given to exempt from duty all materials for the construction of the Kirin-Kuangchengtze and the Kalgan-Suijuan Railways for a period of three years.

Russian Project in Manchuria.—This proposed line is to connect Hailing on the Harbin-Mikolisk Railway and Alasdoria, a point about halfway between Vladivostok and Nikolisk. It would run through Manchuria from Hailing to Hungchun. From Hunchun it would proceed to Possiet Bay and from there north to the terminus.

Railway to Connect Ceylon and India.—Sanction has been secured to extend the South India Railway by building a viaduct across the Pamban Channel, the railhead pushed to Daneshkidi and from there a ferry service to connect with the Ceylon extension.

Railway Program in Korea.—The Chief of the Railway Bureau in Korea has in view the construction of two new railways, one from Tajon to Mokpoo and the other from Gensan to Seoul. The sum of 15,000,000 yen has been appropriated for the former and 16,000,000 yen for the latter. The Diet has been asked for an additional appropriation of 40,000,000 yen to be spent in the next eleven years in railway construction in Korea.

Pekin-Kalgan Extension.—It has been decided to extend this line to Swe Yuan Cheng and the sum of Tls. 17,560,000 will be made available for this work from the surplus earnings of the Imperial Railways of North China.

South Manchuria Freight Traffic.—The total freight earnings for the month of December amounted to yen 1,600,000, an increase over the estimate of over 20,000.

Antung-Mukden Land Purchase.—It is estimated that over yen 1,000,000 will be expended in acquiring lands for the right of way and stations.

Burma Railways.—The receipts for the half year ended December 31st amounted to Rs. 79,34,832, an increase of Rs. 1,01,391 over the receipts for the corresponding period 1908. A new railway school is to be instituted at Yamethin.

Nanking City Railway Sold.—Taotai Chang, a wealthy Chinese of Kiangning, has purchased the system for the sum of Tls. 450,000. This transfer was necessary in order to meet the loan obligations due last month.

Indian Railways.—The receipts for the nine months ended December 31st amounted to Rs. 30,87,25,000 which is an increase of Rs. 1,66,38,130 over the corresponding nine months of the previous year.

Kowloon-Canton Railway.—The latest word on the line to the effect that 30 miles on the Chinese section outward from Canton will be open for traffic in March and that a through connection with Kowloon will be effected by July 1st.

Rolling Stock for the Siamese Royal Railways.—The new workshops on the Petriu line are being utilized to erect the cars which are built of teak, the axles, framework, etc., being imported from Europe. Recently nine locomotives, three passenger, two freight and four tank, were purchased in Germany. Also a shipment received from Europe of five composite first and second class coaches, five composite guards van and third class bogie carriages has been delivered to the Northern line according to the *Siam Times*.

THE JAPANESE RAILWAY ESTIMATES.—In referring to the budget of the Railway Board Baron Goto said that the annual revenue of the board during the present fiscal year is 90 million *yen* and the expenditure about 80 million *yen*, leaving a profit af 8,800,000 *yen*, of which 500,000 *yen* is placed to reserve, so that the net profit is 8,300,000 *yen*. As to the Korean railways, their annual expenditure amounts to 5,600,000 *yen* and revenue to 5,300,000 *yen*, showing a net profit of 300,000 yen. About 5,500,000 *yen* is to be paid out for the construction of railways in Korea.

INDIAN RAILWAY OPERATION.—The ratio of working expenses to gross earnings are as follows: Indian Midland Railway, half-year, 56.08%; Bengal-Nagpur Railroad, half year, 51.18%; South Indian Railway Company, half year, 50.76%; Assam-Bengal Railway, half year, 92.07%.

CHINA'S OUTSTANDING DEBTS

The Tientsin *Times* gives the following list of loans contracted since 1885 with the amounts outstanding:

Date.	GENERAL LOANS
1886	Jardine, Matheson & Co., £115,000 7 per cent. £48,000 outstanding.
1894	H'kong and S'hai Bank, £1,635,000 7 per cent. £817,500 outstanding.
1895	Arnhold, Karberg and Co., Ninking, £1,000,000 6 per cent. £466,700 outstanding.
1895	Through Chartered Bank, £1,000,000 6 per cent. £466,700 outstanding.
1895	H'kong and S'hai Bank, £3,000,000 6 per cent. £1,200,000 outstanding.
	SINO-JAPANESE WAR
1895	Franco-Russian Government Loan, £15-820,000 4 per cent. £12,427,418 outstanding.
1896	English and German Government, £16,-000,000 4 per cent. £13,342,625 outstanding.
1898	English and German Government, £16,-000,000 4½ per cent. £14,584,000 outstanding.
	BOXER INDEMNITY
1901	A. £11,250,000 4 per cent. £10,267,254
1901	B. £ 9,000,000 4 per cent. £ 9,000,000
1901	C. £22, 500,000 4 per cent. £22,500,000
1901	D. £ 7,500,000 4 per cent. £ 7,500,000
1901	E. £17,250,000 4 per cent. £17,250,000
1905	Special Loan, £1,000,000 5 per cent. £483,333.
1905	H. and S. Bank, £500,000,000 5 per cent.
	RAILWAY LOANS
1898	British Loan, I.R.N.C. £2,300,000 5½ per cent. £2,070,000 outstanding.
1896	Russo-Chinese Loan for Chinese Eastern Railway T. 5,000,000 6½ per cent. T. 5,000,000 outstanding.
1898	Belgian Loan for Peking-Hankow Railway, £400,000 5½ per cent. £400,000 outstanding.
1898	Russo-Chinese Chin Tai Railway Loan, Fcs. 40,000,000 5½ per cent. Fcs. 40,-000,000 outstanding.
1904	Belgian Kaifung-Honan Railway Loan, Fcs. 25,000,000 5½ per cent. Fcs. 25,-000,000 outstanding.
1904-6	British Loan Shanghai, Nanking Loan £2,900,000 5½ per cent. £2,900,000 outstanding.
1905	Peking Syndicate Taokow Cheng Hwa £700,000 5½ per cent. Paid 1908, outstanding.
1907	Japanese Government Loan Kirin Chang Chun, Y800,000 5½ per cent. Y800,000 outstanding.
1907	British Loan Kiukiang Railway, £1,-500,000 5½ per cent. £1,000,000 outstanding.
1907	British Loan Canton-Hankow Railway, £1,000,000 5½ per cent. £1,000,000 outstanding.
1907	British Loan Shanghai-Hanchow and Ning-po Railway, £1,500,000 5½ per cent. £1,500,000 outstanding.
1909	Deutsch-Asiatische Bank Tientsin-Pukow Railway, £4,000,000 5½ per cent. £4,000,000 outstanding.

Total outstanding, £136,223,590.

CONTRACTING NEWS

BIDS OPENED, ROYAL SOUTHERN RAILWAY OF SIAM—Five tank engines and 130 steel ballast cars.—Engine Tenders:—

Société Anonyme Franco Belge, Raismes	£6,452
Manning Wardle, agents Howarth Erskine Ltd., Bangkok	8,330
Henschel & Sohn, Cassel,	5,030- 3-6
Arn Jung, Jugenthal b Kirchen	4,975
Hannoversche Maschinenbau Actien Gesellschaft, Hannover Linden	4,915-18-3
Deutsch Siamesische Handelsgesellschaft, Bangkok	4,775
Locomotivfabrik Krauss and Co. Actien gesellschaft, Munchen	4,630
North British Locomotive Co., Ltd., Glasgow	6,963
R. and W. Hamthorn Leslie and Co., Newcastle on Tyne	5,845-1
Maschinenbau Anstalt "Humboldt," Kalk bei Keln a Rhein	5,385
Beyer Peacock and Co., Manchester	7,400
Hohenzollern Actiengesellschaft fur Lokomotivbau, Dusseldorf, Grafenberg	5,400-6-3
Berlinner Maschinenbau Actien Gesellschaft vormals L. Schwartzkopff, Berlin	4,648-11
Usines Metallurgiques du Hainaut Société Anonyme à Couillet	5,278-19
Brush Electrical Engineering Co., London, Breslauer Actien Gessellschaft, fur	5,698
Eisenbahn Wagenbau und Maschinenbau, Anstalt, Breslau	4,851-16
Maschinenfabrik Eslingen in Esslingen	6,465
Société Anonyme des Ateliers Metallurgiques, Paris	5,698
W. G. Bagnall & Co., Stafford	8,524
A. Borsig, Berlin Tegel, per Windsor & Co	4,465-10
Direction der osterreichischen werk und fabriken, Wien	4,830
Ateliers de construction de la Biesme and Bouffioulx, per Société Anonyme Belge	5,626
Compagnie de Fives-Lille, per E. C. Monod et fils Bangkok	9,808
Steel Bros. & Co. Ltd., Siam, (Lima Loco and Machine Co., Ohio)	7,120
Robert Stephenson & Co. Ltd., Darlington, per the Borneo Co. Ltd., Bangkok	7,413
B. Grimm & Co., Bangkok, (Henschel and Sohn, Cassel)	5,030-3-6
John Cockerill, Seraing, per G. Kluzer & Co., Bangkok	6,228
Orenstein and Koppel, per East Asiatic Co. Ltd	6,428-10
Dick Kerr and Co., per Samson Dock and Engineering Co	7,160
Mitsui Bussan Kaisha	7,892-8-10
Avonside Engine Works, per Mr. J. M. Dunlop	7,216
Kerr Stuart and Co., London, ,, ,,	8,320
Kitson and Co., Leeds, ,, ,,	8,400
Nasmyth-Wilson Co., Manchester, ,, ,,	7,932
Soc. Anonyme de Construction des Ateliers Metallurgiques, Brussels, per Mr. J. M. Dunlop	6,174-8-6
Barclay, Kilmarnock, per Bangkok Dock Co. Ltd	7,385
Diethelm and Co. Ltd., Bangkok	7,010
Establishments Piguet and Co., per Comptoir Francais du Siam	9,160
S. A. B. for Desforges à Haines St. Pierre	6,446-10
Baldwin Co. (per Edwards and Co.)	6,076
Société St. Leonard, Liege	5,420

STEEL BALLAST CARS

Gessellschaft Harkort, Duisburg, Germany	13,034-5
Société Anonyme de Travaux, Dyle & Balacan, Paris	12,550
Midland Railway Carriage and Wagon Co. England, per Howarth Erskine Ltd., Bangkok	12,238-14-8
Jules Weitz, Lyon	8,010-16
J. Goossens, Aachen	7,458-6
The Metropolitan Amalgamated Railway Carriage and Wagon Co. Ltd., Saltley	13,226-8
C. Bulmhardt Vohwinkel Simonshaus, Vohwinkel	10,232-18
Both and Tilmann, Dortmund	8,755
Gottfried Lindner, Halle	10,560-9
Société Anonyme des Ateliers de Construction Hal., Belgium	11,512-1
Fritz Bothmann and Gluck, Gotha	17,341-19
L. I. Enthoven and Cie Pletterij, Delft	11,174-4-1
Action-gessellschaft, Weimat	10,726-4-6
Hungarian Ry. Carriage and Machine Works, per Alois Schweiger and Co., Ltd., Bangkok	10,706-16
Dusseldorfer Eisenbahnbedorf vormals Carl Weyer and Co., Dusseldorf-Oberbilk	12,883-18-10
Waggonfabrik Act-ges vorm P. Herbrand and Cie., Kehr Ehrenfeld	11,811
Canon-Legrand, Mons	10,981-3
La Brugeoise Saint Michel lez Bruges	10,371-1
Nord de la France et Nicaise & Delcuve per Howarth Erskine Ltd	9,228
S. J. Claye, Long Eaton	12,154-2-6
Brush Electrical Engineering Co., London	9,606
L'Industrie de Lavaine	9,808-9
Nesselsdorfer Waggonfabrik Export, 7 Ringhoffer Smichow, Wien, per B. Grimm and Co	9,172
Baume & Marpent Usines et Fonderies Haine-Saint-Pierre, Belgium, per G. Kluzer and Co., Bangkok	10,208
P. and W. Maclellan Ltd., Glasgow	16,966
Hannoversehewagonfabrik, Hannover Linden	15,397-8
Orenstein and Koppel per East Asiatic Co. Ltd	8,076-7-3
Van der Sypen & Charlier, Coln Deitz, Germany, per Windsor & Co. (Wood wagons £876-4-5 extra for crucible steel tyres)	8,223-7-10
Dick Kerr and Co. per Samsen Dock & Engineering Co	16,705
Maschinenfabrik A. G. Augsburg, Nurnberg, per Behn, Meyer & Co. Ltd., Bangkok	15,353
Mitsui Bussan Kaisha	12,179-13-7
Société Anonyme Metallurgique La Nervienne Marcinelle, per A. Diana & Co	10,940
Kerr Stuart & Co., London, per Mr. J. M. Dunlop	16,190-2-6
Leeds Forge Co., per Mr. J. M. Dunlop	24,447
Hurst Nelson & Co., Motherwell	11,908-10]
Eisenwerk Gustav Trelenberg, Breslau Grabshen	14,598-9-1
Establishments Arbel., Paris, per Comptoir Francais du Siam	11,389-5-4
Gloucester Wagon Co., per Denny Mott and Dickson Ltd	17,432-8
Usines Braines le Comte, agent S. A. B.	9,750
Nederlandsche Fabrick van Werktingen en Spoorweg Materiel, Amsterdam	13,057-5
Société anonyme des Ateliers Metallurgiques, Paris	9,307-10

CONTRACT AWARDED.—Bureau of Philippine Constabulary.—10,000 pairs of shoes. Awarded Messrs. Erlanger & Galinger, Manila.—Price ₱6.874 a pair.

PROPOSALS INVITED.—SHANGHAI MUNICIPALITY.—17,500 tons of small nut coal—bids open February 19th, 1910.

CONTRACT AWARDED.—Singapore Municipality.—Installing gravitation main and filters $154,910.

BIDS OPENED.—Municipality of Penang.—*Quarters for Engineer, Electric Power Station.*—Chin Ah Chin—$5,927, Chin Ah Thoon—$9,689.20, Yong Hong Thoy—$8,145, Ng Ah Heang $7,800, Chi Ah Kong—$7,069.93, Chin Ah Chin—$6,750, Yoong Loon Swee—$7,500, Moey Ah Thieu—$67,500, and Lee Ah Cheang.—$6,494. *Quarters for Superintendent of Abattoirs.* Chin Ah Thoon—$5,800, Yong Hong Thoy—$6,100, Noah Ah Heang—$6,200, Chi Ah Kong—$7,289.07, Lee Ah Cheang—$5,890, Lee Hong Tuck—$6,275.18, and Tan Yew Koon—$7,474.

PROPOSALS INVITED.—Frozen fresh beef and mutton.—Headquarters Philippines Division, Office Chief Commissary, Manila, P. I., January 3, 1910.—Sealed proposals, in triplicate, subject to usual conditions, will be received at this office until 11 o'clock a. m., April 5, 1910, at which time and place they will be opened in the presence of attending bidders, for furnishing and delivering about six million six hundred thousand (6,600,000) pounds of frozen fresh beef and two hundred thousand (200,000) pounds of frozen fresh mutton to the Subsistence Department, U. S. Army, at Manila, P. I., during year ending June 30, 1911. The contractor will be required to pay all customs duties. The United States reserves the right to decrease the amount advertised for, upon reasonable notice to the contractor, or to increase the amount with his consent. Each proposal must be accompanied with a bidder's guaranty in the amount of $20,000 or with certified check for that sum on a bank of approved standing in Manila. The bidder to whom the contract is awarded will be required to give bond. Blanks and full information furnished on application to this office or to the nearest United States consul. Envelopes containing proposals must be marked: "Proposals for frozen fresh beef and mutton for fiscal year 1911, to be opened April 5, 1910," and addressed to the undersigned.—D. L. BRAINARD, Lieut. Col., D. C. G., U. S. Army, Chief Commissary.

PROPOSALS INVITED.—Bangkok Sanitary Department.—5,445 tons of cast-iron water pipes and accessories opened April 15, 1910.

PROPOSALS FOR COAL:—Headquarters Philippines Division, Office of Chief Quartermaster, Manila, December 13th, 1909. Sealed proposals, in triplicate, subject to usual conditions, for furnishing approximately 65,000 tons of coal to the Quartermaster Department, U. S. Army, during the Fiscal Year 1911, will be received here until 10:00 a. m. May 16th, 1910, and then opened. Information and blank forms furnished on application. F. G. Hodgson, Deputy Quartermaster General, U. S. A., Chief Quartermaster.

PROPOSALS INVITED.—Bureau of Supply, Manila—Hardware, steel, stationery, etc., including 24 fire extinguishers, 2500 kilos round commercial five-eighths inch iron; 400 kegs nails; 5,000 meters standard 2" pipe; 100 kilos rivets; 3,000 shovels; 2,500 kilos, etc., crucible and octagonal steel; 20 boxes paper; 200 gross pencils, etc., opened March 7th, 1910.

MANILA GOVERNMENT PIERS

The first freight steamer to utilize the new Government Piers at Manila was the Verona of the Hamburg-America line with 4,000 tons to discharge. The venture was a success and indicates an unusual saving to the port when the plans of the government for the handling of cargo is complete. It is estimated that among the small importers alone a saving of at least ₱375,000 will be made annually. At the present time it costs approximately ₱6 a ton to discharge cargo and place it in the bodegas while under the new wharf regulations the cost will not exceed ₱3.50. Cargo received annually in the port of Manila averages about 400,000 tons, of which about 150,000 tons are invoiced to small importers. The large importers, fully equipped to take ship side delivery by means of lighters, will not for the present find much advantage, but with more effective means of transportation from the port to the bodegas as is proposed, a great reduction and saving is anticipated.

In connection with the operation of the Government Piers, the Collector of Customs at Manila has issued the following regulations which will prove of interest to the shipping trade:

"Par. I.—The government piers at the Port of Manila shall be operated by a Division of Piers and in conjunction with the Arrastre plant, and shall be under the general supervision of the Deputy Surveyor of Customs. The personnel of the Division of Piers shall be fixed from time to time by the Insular Collector of Customs with the approval of the Secretary of Finance and Justice. The expense of the operation of the government piers, including salaries, wages, materials and incidental expenses, shall be paid from the sums received from vessels as pier charges, and from the receipts from the sale of water on said piers, subject to the approval of the Insular Collector of Customs, and in accordance with Section 6 of Act No. 1955 of the Philippine legislature.

"Par. II.—A vessel going alongside a pier shall take such berth as designated by the wharfinger and must be berthed and secured by a pilot or master in charge of the vessel. All responsibility for insecure or improper mooring and for all consequences arising therefrom shall lie with the vessel. All vessels shall use rat funnels on their cables and ropes connecting with a pier or the shore.

"Par. III.—A vessel about to leave its berth at a pier shall give due notice to the wharfinger that he may provide attendance to let go ropes and moorings.

"Par. IV.—The regular working hours for the Arrastre plant and the Division of Piers for discharging or loading vessels at a pier shall be from 7 A. M. to 12 A. M. and from 1 P. M. to 5 P. M. daily, except Sundays and legal holidays. Overtime hours for night work shall be from 6 P. M. until 12 midnight and from 12:30 A. M. until 6 A. M. All work performed on Sundays or legal holidays shall be overtime work.

"Par. V.—A vessel desiring to work at night, on Sunday or on a legal holiday, shall take out the required customs permit and shall give at least a half day's notice in advance to the wharfinger in order that proper arrangements may be made therefor.

"Par. VI.—When delivery of imported merchandise is taken from a pier, the laborers for loading carts or other vehicles, or for loading into lighters or cascos, shall be furnished by the Arrastre plant. No other laborers shall be permitted on the piers.

"Par. VII.—A half day's notice in advance shall be given to the wharfinger when delivery of imported merchandise is desired.

"Par. VIII.—Imported merchandise which is not delivered in six days after the completion of the discharge of the carrying vessel, Sundays and legal holidays excepted, may be removed from the pier to the Custom House wharf in case there is lack of storage space on the pier. An additional charge of ₱2.00 per ton shall be made by the Arrastre plant on such merchandise.

"Par. IX.—Inflammable merchandise shall only be landed on a pier by special permission of the wharfinger and when so landed shall be immediately removed therefrom. No coal-oil, gasoline, dynamite, gunpowder or other explosives shall be landed on a pier.

"Par. X.—Shipside delivery shall be given only to large shipments consigned to the United States Army or Navy and to shipments of bulk cargo when so stowed as to not interfere with the rapid discharge of the carrying vessel.

"Par. XI.—The stevedoring of vessels discharging or loading at a pier will be performed as heretofore by stevedores employed by ships' agents or masters. The stevedore shall deposit discharged cargo on the pier at a doorway, where charge thereof will be taken by the Arrastre plant. Merchandise to be loaded on a vessel from a pier shall be delivered to the stevedore at a doorway opposite the hatch. The stevedore or ship's officer shall give due notice in advance as to the number of hatches and cranes to be worked and the character of cargo.

"Par. XII.—The delivery of merhandise to the importer from the piers shall be made under present Customs and Arrastre regulations the same as heretofore from the Customs wharf, with the exception of laborers as provided in Paragraph VI. The same permits and other papers shall be required as heretofore.

"Par. XIII.—The same Customs and Arrastre plant regulations shall govern imported merchandise landed on the piers as governs merchandise landed at the Custom House.

"Par. XIV.—If it is desired to load merchandise on a vessel from a pier, such merchandise shall be brought to the pier as near to the time of loading as possible. The unloading of carts and other handling of such merchandise on a pier shall be done by the Arrastre plant.

"Par. XV.—Every vessel coming to a pier shall pay a pier charge of one centavo per gross ton per twenty-four hours or for any part thereof, exceeding six hours. Such charge shall be paid to the Customs cashier, or guaranteed by the agent, before the clearance of the vessel, and shall be deposited by the cashier in a special fund as 'receipts from the operation of government piers.'

"Par. XVI.—Vessels shall leave the pier as soon as the discharge or lading of cargo is finished. Any vessel, failing to leave the pier after the master thereof has received notice to leave from the wharfinger, shall be liable to an additional charge of one centavo per gross ton for each succeeding twenty-four hours or part thereof, exceeding six hours, in the discretion of the Insular Collector of Customs.

"Par. XVII.—Any vessel from a foreign port, going to a pier for the purpose solely of landing or taking on passengers and their baggage, shall be exempt for the first twelve hours for the pier charges above specified. For each succeeding twenty-four hours or any part thereof, exceeding six hours, the vessel shall pay the pier charges provided by Paragraph XV of these regulations.

"Par. XVIII.—Coastwise vessels going to a pier for the purpose of loading transit cargo shall be exempt from payment of pier charges for the first twelve hours. After that time they shall be subject to a pier charge of one half of one centavo per gross ton for each twenty-four hours, or part thereof.

"Par. XIX.—Merchandise brought to a pier for shipment and not loaded on a vessel within forty-eight hours, shall thereafter pay storage charges up to the hour of lading at the rate of ten centavos per ton for each twenty-four hours or part thereof. Any merchandise sent to a pier for shipment and not loaded on the exporting vessel for which it was intended must be removed from the pier within forty-eight hours after the departure of said vessel, and if not so removed, shall be liable to a storage charge of twenty centavos per ton for each twenty-four hours or part thereof or may be removed from the pier by the Arrastre plant at the expense of the owner or consignor.

"Par. XX.—Incoming or outgoing baggage of passengers, not personally carried by them, will be handled on the pier by the Arrastre plant without charge.

"*Arrastre Charges.*—Par. XXI.—The following charges shall be collected by the Arrastre plant on all merchandise handled by it at a pier:

"Imported merchandise for examination and delivery at the Port of Manila ₱0.90 per ton, in accordance with present Arrastre regulations.

"Horses, cattle and like animals, ₱0.30 per head; pigs, sheep, goats and like animals, ₱0.10 per head. (All animals must be immediately removed from the pier.)

"Expert cargo ₱0.30 per ton.

"Transit cargo for shipment to another port of entry in the Philippine Islands ₱0.50 per ton.

"*Storage Charges.*—Par. XXII.—All imported merchandise, with the exception of transit cargo, shall pay storage at the same rate as is provided for the storage of merchandise in regular Customs warehouses. No storage charges shall accrue on transit cargo for shipment to another port of entry in the Philippine Islands up to and including the sailing date of the first coastwise vessel clearing for the port of destination, provided, however, that such period shall in no case exceed fifteen days from the date of clearance of the importing vessel. In any case, where storage accrues on transit cargo, the same shall be collected at the rate of seven centavos per ton per day.

"*Water Rates.*—Par. XXIII.—Fresh water shall be furnished to vessels desiring to take the same at the rate of twenty centavos per ton. Receipts from this source shall be deposited by the Cashier as "Receipts from operation of Government piers."

"*Government Vessels.*—Par. XXIV.—Vessels of the United States or of the Government of the Philippine Islands shall be permitted to use the pier when there is a berth available therefor, provided they shall first obtain from the Deputy Surveyor of Customs the required permit. No pier charge shall first obtain from the Deputy Surveyor of Customs the required permit. No pier charge shall be made against a Government vessel using the piers as above provided.

"Par. XXV.—The provisions of this Order shall take effect January 15, 1910."

DECEMBER RUBBER RETURNS

	lb.
Anglo Malay	53,489
Balgownie	7,384
Bertam	13,500
Highlands & Lowlands	46,078
Inch Kenneth	11,908
Kamuning	6,062
Kuala Lumpur	46,201
Lanadron	24,420
Ledbury	8,270
Linggi	59,000
London Asiatic	10,076
Malacca Plantations	29,000
Pataling	2,195
Sandycroft	11,063
Singapore & Johore	7,100
Singapore Para	5,000
Valambrosa	39,000

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* Fraser & Co.

DECEMBER TIN RETURNS*

	Piculs.
Belat	425
Bruang	174
Bruseh	221
Gopeng	600
Kanaboi	464
Kinta	500
Kuantan	60
Lahat	641
New Gopeng	200
Pahang Consolidated	1,000
Pengkalen	500
Pusing Bharu	773
Pusing Lama	557
Rambutan	475
Redhills	356
Royal Johore	71
Salak South	138
Sempam	21
Serendah	465
Sipiau	128
Tekka	800
Tronoh	4,455

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* Fraser & Co.

ELECTRIC RAILWAYS, POWER, LIGHT, TELEGRAPH, TELEPHONES, AIRSHIPS, ETC.

TRAMWAY COMPANY'S PROPERTY IN JAPAN.—The following property may be held by a tramway corporation or trust:

(1) The tramway line, the land used for the line, structures standing on the same, and plant and machinery; (2) workshops, godowns, stables, electric motor houses, electric generating houses, business offices, official quarters, and other works or buildings, and land required for the traffic, and implements and machinery attached thereto; (3) the structures necessary for water supply, the land used therefor, and implements and machinery attached thereto; (4) structures required for communication, signaling, and generation of electric current, the land used therefor, and implements and machinery appertaining thereto; (5) superficies created on real property owned by others for the purpose of holding or using the structures specified in the foregoing four paragraphs, and registered leases and servitudes created on the land specified in the foregoing four paragraphs; (6) carriages, horses, implements, and machinery appertaining thereto; (7) materials, implements, and machinery required for the maintenance of the tramway lines and the repair of other works.

WIRELESS FOR HONGKONG.—At the annual meeting of the General Chamber of Commerce the Hon. E. A. Hewitt, chairman, referred to the necessity of a wireless station at that port and said in part:

"The advisability, I may say, the absolute necessity, for a properly equipped station in the Colony must be apparent to us all. Such a station should, I consider, have a range of at least 1,500 miles. This would enable us to communicate direct with Singapore, Kobe, Calcutta, the Philippines and other points in the East which are in direct tradal connection with Hongkong. While it is not the province of the Chamber of Commerce to push the interests of any individual business concern, it appears that we should no longer be dependent upon H. M. service for our wireless station, but that one should be erected independently of the Navy and in order to make this thoroughly efficient and self-supporting it should be conducted as a commercial undertaking and not as a Government concern. Of course the usual conditions would have to be imposed to preserve sovereign rights and control in time of war.

AVIATION IN CEYLON.—Mr. Sands, one of M. Latham's first pupils, has offered to make monoplane exhibition flights in the islands for a guarantee of £5,000.

CALCUTTA BIPLANE INVENTION.—A successful trial of a biplane invented by a Punjabi took place in Calcutta recently.

AEROPLANES IN BANGKOK.—Trials of the Blériot monoplane took place on the Sports Club race course last month and worked out satisfactorily. An aviation meeting is being urged.

SIAMESE TRAMWAY COMPANY.—An extraordinary meeting of the shareholders of this company was held last month at which the following resolution was adopted:

"That the Directors of the Company be authorised to redeem, in such instalments and at such periods as they shall deem fit, the 8% debentures issued by the Company, beginning from the highest serial number and proceeding serially to lower numbers; giving the holders at least two months' notice from date of posting by registered mail and offering them the option of payment in cash or instead 6½% debentures; and that the directors be authorised to issue debentures class B of Tcs. 100 each or Class C of £10 each; to bear interest at the rate of 6½% per annum payable on the 30th June and 31st December of each year and redeemable at the option of the Company not before six years from issue and not later than 10 years from date of issue. The total issue of debentures by the Company not to exceed at any time Tcs. 725,000."

The conversion of debentures and the saving of Ticals 10,000 on power by a new arrangement with the Siam Electricity Company is estimated to be equal to 3% on capital.

JAPANESE ELECTRICAL ENTERPRISE.—The *Yorodzu Choho* in reviewing the progress of electric enterprise in Japan says that seventeen electric light concerns and eight electric railways were opened, the former representing 50,000 kilowats supplying 290,000 lights and the latter representing 80,000 h. p., operating 160 miles of railway during the year just ended. This means an increase of 50% compared with 1908 and it is expected that increase for 1910 will reach 70%. The program includes the hydro-electric project to harness the Shinanogawa and supply power to the railway crossing the Usui-toge.

There is also a report to the effect that an application has been filed by Baron Chisaka and others for a charter to organize a company with a capital of yen 8,000,000 to harness the river Tone and supply light to Tokyo at sen 75 a light instead of Yen 1.20 now being charged. The promoters also promise to install all the wires underground.

It is estimated by one exchange that there are 27 electric projects afoot for the year including those increasing their capital and operations. The Odawara Electric Railway Co. has increased its capital by yen 1,320,000 and will extend its present line to Goro via Miyanoshita and Owigiana to connect with the Tokaido Railway. A project is under way to construct a tramway from Temma Cho, Chita district, the terminus of the Nagoya line to Tokonama Cho, Chita district, a distance of 21 miles. A company has been formed for this purpose at Nagoya. The operation of the Yamanote Electric Railway which was opened December 16th has been most satisfactory. The daily receipts have been over yen 750 a day, an increase of yen 150 a day compared with the locomotive system. An increase in the number of stations and daily trains is under consideration.

ELECTRICAL INDUSTRIES OF SIAM.—Vice Consul Hansen of Bangkok gives the following information regarding these enterprises:

"The light and power plant for Bangkok is furnished by the Siam Electricity Company (Limited), a Danish company. Its equipment consists of Babcock & Wilcox boilers, Brush compound B. and W. triple expansion engines, Curtis turbine, and others; Morley, G. E. C., Short, and other dynamos; Terrarie, Thompson, G. E. C., and other motors. The electric power at the consumers' terminals is 100 volts, 100 cycle, single phase. The company began operations in September, 1890, and is the only electric-supply company in Siam. It furnishes the electric power and light for the city of Bangkok, both public and private, and also supplies the electric power for the 25-mile single-track overhead-trolley system of tramways. This company represents an investment of $1,500,000, and paid a dividend last year of 12 per cent and a bonus of $1.50. The original shares were issued at about $50 each, and at last quotation were valued at about $180.

"The telegraphs are owned and operated by the Government. The telegraphs and posts are under one directorship, and the income from these two departments for the year 1906-7 was $352,381, and the expenditures $427,275 leaving a deficit of $74,894. Siam has, up to the present, no wireless telegraphy in operation.

"The Government also owns and operates the telephones. A new installation was finished this year. It is of the central-battery system, arranged on the common-battery principle, for 1,500 subscribers. The electric power, obtained from the Siam Electricity Company, is 100 volts, 100 cycle single phase, and two sets of motor generators. The rate is $5.50 monthly. The contractors for this work were a firm of Stockholm, Sweden, and, as may be seen in the foregoing table, Sweden is credited with $52,222 worth of imports of electrical goods for last year. There is a uniform duty on all electrical goods at 3 per cent ad valorem."

General Electric and Shibaura Works Amalgamation.—A contract was signed in December at New York between the representatives of the two companies by which the capital of the new company will be yen 2,000,000, the property of the Shibaura Works to represent yen 1,000,000, and the General Electric will take yen 500,000 in stock for the use of patents and be represented by one director. The Tokyo Electric shareholders will be invited to participate in a portion of the rest of the stock. The contract extends over a period of ten years.

Yokohama Electric Company's Loan.—The negotiations between this company and the Mitsui Bank with regard to the flotation of loan of yen 1,500,000 have not been successful. The bank agreed to underwrite at 98 bonds carrying 6.5% per annum and to charge 2 rin commission. The company, however, insists on face value.

Philippine Government Telegraph School—This institution which was established in September, 1908, and has trained 146 pupils, 76 of which now hold positions in the insular service, 16 have resigned, 11 have been removed for cause and 43 are taking the course at the present time. The average student takes about six months to graduate. Students receive a small salary which cover expenses while in training. The instruction covers telegraphy, postal work, banking, registry with circuit and switchboard manipulation. This makes each graduate familiar with every department of postal and telegraph work as well as savings bank work.

Baguio Electric Light Plant.—The work on this installation is being pushed and will be completed by the time the exodus to the Summer Capital begins. The contractors are the Electrical Supply Company of Manila.

New Tokyo Gas Company.—Great interest is being taken in the formation of a new gas company with a capital of Yen 10,000,000 to enter into competition with the Tokyo Gas Company which has heretofore held a monopoly in the city. The name of the company is the Chiyoda Gas Company and it has been agitated for some time.

The Shanghai Tramways.—Two new trailers have been put in operation in Shanghai. They are ten bench open cars each having accommodation for seating 40 fares. They are placed in the second class and are 26 feet in length.

Newchwang Telegraph Office.—A new office will be constructed at this point in the spring.

Japanese Electrical Measurement.—A bill has been introduced in the Diet providing that the unit of electric resistance will be the ohm; of current, the ampere; of pressure, the volt; and of power the watt. A penalty for fraudulent use of disqualified meters will carry the penalty of one year's imprisonment or a fine not exceeding yen 500.

U. S. Naval Wireless.—In the general plan to establish a complete system of wireless stations connecting Washington with all the dependencies a station is contemplated at Dutch Harbor, Alaska, to carry wireless to Behring Sea.

British Admiralty Wireless.—The conference at Sydney recommended the establishment of the "All Red" Government-owned wireless scheme in the Pacific with stations in Sydney, Bay, and on New Zealand, Suva and Ocean Islands.

South Manchuria Railway Electric Works.—This plant is now supplying 400 h. p. for industrial purposes at Dairen. It is distributed among the Kawasaki Dock Yard, Nisshin Bean Mill, the South Manchuria Railway Shops and a number of smaller manufacturing plants.

Szechuan-Tibet Telegraph Line.—Lack of funds is reported to stand in the way of the completion of this line as previously planned. The President of the Board of Posts and Communications is now endeavoring to make arrangements with the Viceroy of Szechuan to raise the necessary funds to make up the deficit.

Vladivostock Electric Railway.—It is reported that a contract has been let to a New York firm for the construction of a service in this city including electric lighting. The city guarantees a net profit on capital of 6.25% and any surplus will be divided between the company and the municipality.

Iloilo Electric Light.—Under the contract with the municipality the Iloilo Electric Light Company undertakes to instal 236 lights. The city agrees to pay half the cost of installation.

Electric Lifts in Shanghai.—Messrs. Scott, Harding & Co. have installed in Shanghai during the past year eleven lifts manufactured by the well known firm of Smith, Major & Stevens Ltd. of which Messrs. Scott, Harding & Co. are agents. They also have orders for seven more lifts to be installed in the near future.

PUBLIC WORKS, WHARVES, DOCKS, BUILDINGS, ETC.

The Chefoo Breakwater.—At the meeting of the commercial interests of Chefoo it was agreed that a recommendation be made favoring the increase of wharfage dues and port dues to meet the expense of constructing a breakwater to cost approximately Tls. 1,500,000. It is estimated that the increase in dues will aggregate about Tls. 120,000 per annum. These recommendations have been forwarded to Peking.

The Chapei Waterworks.—The site for the works has been secured and fenced and the Viceroy of Nanking has ordered the necessary machinery from the Kiangnan Arsenal. The system will be installed as soon as possible.

The Peking Waterworks.—A report from the American legation refers specially to the Peking system and says:

"The contract for the Peking waterworks was awarded to a German company at the reported price of $1,000,000. The company has finished the work in exceptionally good time, and to the general approval of both foreigners and Chinese.

"The settling tanks were furnished by the Riter-Conley Company, of Pittsburg, Pa. Patented steel mains have been used, and the Judlow Valve Manufacturing Company, of Troy, N. Y., has furnished the valves, hydrants, water gates, etc., for the system.

"The water is taken from the Shaho River, which rises in the hills west of Peking, and is an unusually clear-water stream. It passes through no villages.

"The pumping station at Sunho consists of two centrifugal pumps, with Borsig engines, having a combined capacity of about 5,000 gallons per minute. The water is first pumped into three settling tanks, each 60 feet in diameter and 16 feet deep, whence it is run into filtering pits. There are ten of these pits roofed over with concrete, with ventilating pipes; sand and gravel filters are used.

"From the pumping station the water is forced through an 18-inch main to a large reservoir at the Tung-chih-men the northeast gate of the city. This reservoir is also covered with concrete, and a recreation park will soon cover the site. From this reservoir the water is pumped by plunger pumps into a tower 180 feet high and with a capacity of 700 cubic meters, which forces the water through the mains to all parts of the city. To guard against accident it is so arranged that should anything go wrong with the tower at the Tung-chih-men, the pumps can force the water to the residences, or should the Tung-chih-men pumping station break down the pumps at Sunho fill the tower, and should both the Tung chih-men pumps and tower become unserviceable, the Sunho station forces the water to the houses of the consumers. The pressure of the water in the tower is sufficient to force a stream from the house hydrants 120 feet high, and as there are no buildings in Peking of this height, the facilities for fighting fire have been greatly enhanced.

"A noticeable feature of this work is that at the insistence of the Chinese directors of the company the washing of sand and gravel for the filters was done by hand. A representative of the company states that one-half the cost of the hand washing would have paid for a washing machine and the work completed in one-third the time.

"The resident area to be supplied by the waterworks contains a population of about 700,000 (128,000 families), among which cholera, smallpox, typhus, and other contagious diseases have been more or less prevalent. The use of pure water, together with the benefits of the system of removal of garbage and cleansing of streets initiated by the city police department, will tend greatly to reduce, if in time not entirely to eradicate, these diseases. Peking is situated in one of the most healthful climatic zones in China, and with proper sanitary precautions should show as low a death rate as the average American and European cities.

"The waterworks are to be administered solely by Chinese. The cost of water to consumers will, it is said, be less than 40 cents per 1,000 gallons."

Bangkok Cathedral.—A new Roman Catholic Cathedral is being built in Bangkok which when completed will cost many hundreds of thousands of ticals. The foundations alone represent over Ticals 55,000.

Dredging Port Arthur Harbor.—The dredger Kago, which has been dredging in connection with the construction of a coal pier in Port Arthur Harbor, is now in the Kawasaki Dockyard undergoing repairs. About April she will again be set to work on the work of deepening the entire harbor.

Artesian Wells in the Philippines.—Three new machines with a capacity of boring 2,000 feet have been in operation during the last year and the result is that many wells have been bored throughout the islands at great depth. In all there are about 360 wells in operation and in every pueblo where they have been installed the mortality rate has been greatly reduced. These machines were ordered through Messrs. Castle Bros.-Wolf & Sons.

Shiba Park Improvements.—The Tokyo City Council has appropriated the sum of yen 1,000,000 for the purpose of improving this park and preserving the shrines therein. The Tokugawa family will bear a portion of the expense.

Japanese Floating Dock.—The Kawasaki Dockyards recently launched a large floating dock from its yards at Kobe. It was built according to patented designs of Messrs. Clarke & Stanfield, London, and cost approximately yen 250,000.

Hokkaido Public Improvements.—The sum available for the improvement of harbors, roads and bridges amounts to yen 40,000,000 to be paid off in fifteen years.

Haiphong Floating Dock.—A large floating dock capable of accommodating a vessel of 1,500 tons is nearing completion at Haiphong. The cost will be about francs 1,000,000.

Kure Naval Arsenal.—The arsenal is being enlarged by the construction of two large docks and steel works. One of the floating docks will be capable of accommodating a 20,000 ton warship. The arsenal is divided into the gun and the torpedo departments and the gunpowder laboratory. The number of employes engaged average 22,000 and the monthly pay roll approximates yen 450,000.

Custom House at Port Swettenham.—The sum of $12,000 has been appropriated for the construction of a two storey building which will be designed to house the increased force necessary to handle the administration of the customs at this most important port.

Barien Freight Wharves.—With the completion of the new freight sheds which will cover 52,000 square yards in April, the total area covered by sheds will approximate 100,000 square yards.

Kuala Lumpur Water Supply.—The new system soon to be utilized will have a capacity of 2,500,000 gallons of pure water daily.

Foochow Docks and Arsenal.—The Viceroy of Fokien has recommended that, in view of the proposed increase of the Chinese navy, the docks should be extended. This matter will probably be deferred for consideration until the return of the naval commissioners.

Large Pier at Fusan Station.—The completion of a pier 960 feet long with water alongside to accommodate vessels as large as 4,000 tons is announced for the present year. It will connect directly with the station. Besides the piers a landing place for coasting vessels is being constructed. This will greatly facilitate the handling of cargoes.

Senate Building at Peking.—A German firm has secured the contract for the construction of this building. The price named is Tls. 800,000.

SHIPBUILDING, MERCHANT MARINE AND FISHERIES

Great Northern Schedule.—On the next voyage of the Minnesota, she will make Manila her terminus, omitting Shanghai entirely from her itinerary and Hongkong on her homeward trip. She will make Manila via Japanese ports, then proceed to Hongkong, returning to Manila from which port she will sail for Tacoma, via Nagasaki, Kobe and Yokohama.

Dairen Fish Trade.—During the year the fish market at Dairen has handled over yen 350,000 worth of fish of which the greater part came from the neighboring fisheries and the ballance from Chefoho, Shimnoseki and Nagasaki.

American Yacht in Far Eastern Waters.—The yacht Iolanda paid a visit to Singapore and Bangkok last month carrying her owner, Commodore Morton F. Planty, and a party of guests. The vessel has a speed of 17 knots. The party will continue the voyage to China and Japan.

Japan's Merchant Marine.—The official reports place the number of steamers at 1,650 and the tonnage about 1,200,000 while there are 4,800 sailing vessels representing a tonnage of approximately 384,000. Of the larger steamers there are two vessels of over 10,000; six of 9,000 tons; one of 8,000 tons; twenty-one of 7,000 tons; six of 6,000; eighteen of 5,000 tons; 51 of 4,000 tons; 106 of 3,000 tons; and 128 of 2,000 tons.

New Vessel for the Penang-Alor Star Run.—The S.S. Kedah, the new steamer of the Eastern Shipping Company, made its initial trip the latter part of January. A sister ship of the Kedah is also to be put on this run.

New Japanese Cruisers.—Two armored cruisers of 8,500 tons each are to be built during the next two years. One is expected finished in 1913 and the other in 1914. They will carry 12.5 inch guns.

Floating Fire Engine for Hongkong.-This vessel was built by Messrs. W. S. Bailey & Co. and given her speed and efficiency tests early this month. The speed averaged 8.5 knots an hour and a stream of water was projected to a height of 200 feet. The vessel is 90 feet in length.

Dairen-Antung-Service.—An effort is being made to secure a subsidy for the establishment of better steamship service to Antung and it is believed that the Kwangtung Government will consider the matter favorably.

Effect of the Strike.—It is estimated that vessels with an approximate tonnage of 142,000 were lying idle during the month of January owing to the coal strike at Newcastle.

Launching of the Panama Maru.—This vessel, which is one of the six vessels ordered by the Osaka Shosen Kaisha for the Seattle run, was launched from the Mitsu Bishi Dockyard and Engine Works, Nagasaki, January 18th. Her keel was laid in March, 1909, and she will be completed by April, 1910. The Panama is the 87th vessel of the Osaka Shosen Kaisha fleet of which one-third of her tonnage was built in Nagasaki. The vessel will have twinscrews and reciprocating engines. The dimensions, etc., of the vessel are as follows:

Length	400 feet
Breadth	51 "
Depth	326 "
Tonnage, gross	6,000
Indicated horse-power	3,900
Speed	14 knots.

The Kiyo Maru.—This new vessel, built by the Mitsu Bishi Dockyard and Engine Works, Nagasaki, for the Toyo Kisen Kaisha, started on her maiden voyage to South American ports the last of January.

Russian Volunteer Fleet.—The S. S. Orel, one of the five new steamers built for the Vladivostok-Tsuruga run, has arrived and is now making the run regularly.

Kowloon Shipping.—The returns for the quarter ended September 30th, 1909, contain the information that 3,536 vessels, tonnage 298,191, called at that port and 3,670 vessels, 315,300 tonnage, cleared from that port during the term. Besides these vessels there were 731 steam launches from Hongkong.

P. O. Purchases Blue Anchor Fleet.—The Lund's Blue Anchor line, comprising six steamers with a tonnage of 38,995 plying between London and Australian ports, has been purchased by the Peninsular and Oriental Steamship Company.

Dairen Ice Breaker.—The Tatto Maru, 177 tons, built by the Osaka Iron Works for the South Manchuria Railway, has been put in commission.

Formosan-Japan Lines.—The Nippon Yusen Kaisha have placed several large steamers of 6,000 tons on this line. The Osaka company has several steamers of 2000 tons and have secured the s. s. Kasado from the Naval Department for the run so as to compete with the larger vessels of the Nippon line.

Chinese Naval Dispatch Boat.—The Kiangnan Dock and Engineering Works are constructing a dispatch boat for the Imperial Navy and expect to have it ready for Prince Tsai Hsun on his return from Europe. Four tugs have been built by this company for the conservancy works of the Taku bar and are being delivered.

Japanese Battleships.—Two battleships of the Dreadnaught class having a tonnage of 20,800 are being constructed at the dockyards of Kure and Yokosuka and it is expected they will be launched by October this year.

Amoy-Philippine Trade.—Messrs. Jardine Matheson & Co. and Messrs. Butterfield & Swire have each a vessel regularly on this line. They have also installed disinfecting plants at Amoy so that there shall be no interruption of traffic.

New P. & O. Steamers.—Orders have been placed with Messrs. Harland & Wolff and Messrs. Caird & Co. for the construction of two mail steamers of 13,000 tons register for the India, China and Australian Service. This addition will make ten vessels of the first class in this service and the tonnage will aggregate 100,000.

Saghalien Fisheries.—The Japanese have established 30 new fishing stations and are showing every encouragement to the establishment of fishing colonies for the development of the industry.

Australian-Philippine Excursion.—Arrangements have been made by the Publicity Department of the New South Wales Government for an excursion from Manila to Brisbane and ports and return for £100. The excursionists will sail from Manila on June 13th and return about the latter part of July. Arrangements have been perfected for the entertainment of the tourists while in Australia and trips have been arranged to points of interest.

New Philippine Steamship.—Messrs. Ynchausti & Co. have ordered a crack 16-knot steamer in England for the Manila-Iloilo run.

Chinese Registration of Steamship Companies —In order to obtain a complete record of the Country's Shipping the Board of Posts and Communications have drawn up a number of provisional regulations governing the registration of all Chinese Steamship Companies. Under these regulations every such Company must be registered at the Board and obtain a permit from it before it can apply to the Customs for licences for its ships. It is stated that copies of the regulations have already been sent to the Board of Revenue, the Board of Agriculture, Industry and Commerce and the Viceroys and Governors, and that the Customs have been ordered to acquaint all concerned with the same.

U. S. Shipping Subsidy.—The bill presented to congress and endorsed by the administration is known as the Humphrey's Bill. It provides that American mail steamers on the South American, Oriental, or Australian service, of not less than 5,000 gross tonnage, with a speed of not less than 16 knots, and making voyages of 4,000 miles or upwards, shall be granted a subsidy at the rate of $4 per mile, and that the maximum total amount of the subsidy shall be the estimated revenue from the foreign mails carried. It is further provided that steamers entitled to the subsidy shall be built of iron or steel and carry not less than four 6-inch guns. The steamers must be ready for chartering by the Government in case of need, and the officers and at least half the crew must not be transferred to foreign flags without the sanction of the U. S. Secretary of the Navy.

U. S. Quatermaster Launches.—The six launches built by the Shanghai Dock and Engineering Company, Ltd., have been delivered.

The names of the launches are as follows: Mitchell, 90 feet in length, named after Lieutenant James Mitchell, 14th Infantry, who was killed in action on February 6, 1899; McConville, 90 feet, named after Major Edward McConville, First Idaho, killed in action near the present Fort McKinley, February 5, 1899; Ledyard, 90 feet, named after Augustus C. Ledyard, 6th Infantry, killed in action at La Carlota, Negros, December 7, 1899; Adams, 65 feet, named after Lieutenant Frank H. Adams, First South Dakota, killed in action, at Marilao, March 27, 1899; Tilly, 65 feet, named after Captain G. H. Tilly, Signal Corps, killed in action in Negros, May 27, 1899; Forby, 65 feet, named after Captain Lee Forby, First Nebraska, killed in action March 28, 1899.

MINES, MINERALS AND THE METAL TRADE

Japanese Iron Foundry at Penhsihu.—Messrs. Okura & Co. propose establishing a foundry near the Penhsihu coal mine for the purpose of utilizing the fine iron ore found there. It is believed that the operation of the coal and iron mines contemplated will require a capital of approximately yen 2,000,000.

The Champion Reef Gold Company.—The yearly output of this company was 86,252 ounces of gold from 172,378 tons of ore crushed

Philippine Division of Mines.—This division of the Bureau of Science is collecting data for its annual publication on the mineral resources of the islands. All mine owners have been requested to co-operate in the work in order to secure a comprehensive presentation of the subject.

The Paracale Extension Claims.—The boring of 110 holes on the company's placer grounds averaged over ₱1 per cubic yard. One hole ran ₱18 a cubic yard, one ₱9, and one ₱6.

Fushun Coal in Harbin.—There is a growing demand for Fushun coal in Harbin. The orders placed average about 5,000 tons a month, and it is estimated that 20,000 tons will be sold at this point during the winter.

Korean Kerosene Import.—England and America supplied the greater part of the import during the year. In all there were approximately 4,000,000 gallons brought into the country through Fushun and Chemulpo.

Burma Mineral Output.—For the year ended March 31st, 1909, the administrative report shows an output of 173,000,000 gallons of kerosene, gold 7,950 ounces, rubies 165,894 carats, sapphires, 16,390 carats, and jade and jadite, 3,367 cwt.

Coal Near Chinchou.—The Kwantung government has granted a concession to work coal deposits located about 10 miles from Chinchou. The concessionaire is a Japanese brick kiln proprietor at Choushutzu.

The Paracale Gold Dredging Company.—The value of the output of this dredge for the last 18 months amounted to ₱230,000 in value, and in addition it is estimated that there are over 3,000 tons of quartz found under the surface of the ground worked valued at ₱40 per ton.

Lanchou Gold Mines.—A company with a capital of $2,000,000 has been formed to develop these mines, and it is reported that $400,000 are already available.

Duff Development Company Output.—The output for December amounted to 909 ounces, the largest of any month in 1909.

Tayabas Oil Field.—The Bahay Oil Company recently installed a ₱75,000 drilling outfit on their property in Tayabas for the purpose of developing a very promising deposit.

Fushun Coal Shipments.—During the month of December there were approximately 24,000 tons of coal disposed off at the Dairen Wharves. Of the total 13,000 tons went to South China and 200 tons of the Fushun lump coal were shipped to South America.

Korean Iron Mines.—The control of the mines at Challyong and Eunyui has passed to the Wakamatsu Iron Foundry. The development of these deposits is expected to be given marked attention by the company during the year.

Imperial Chinese Gun Factory.—The Army & Navy Board has recommended the establishment of an arms factory by the Government to supply all the ordnance necessary for the two branches of the service. It will probably be made the subject of a report to Prince Tsai Hsun upon his return.

Pulo Laut Coal.—The product of these mines is making headway in the markets of the Far East. The mines are located on the island of Pulo Laut, South East of Dutch Borneo. The company has been operating since 1903 and has built a tramway and docks so as to facilitate shipping. Messrs. Behn Meyer & Co. are the agents.

Tonkin Coal Mines. The total output estimated for 1909 was placed at 850,000 tons. In 1908 the output amounted to 300,000 tons.

Japanese Coal Trust Contemplated.—Advices from Tokyo are to the effect that a combination of fifty colliery proprietors are preparing to combine their interests in Japan.

Japanese Copper Mines.—The output of the six leading copper mines of Japan is approximately 50,000,000 pounds annually of which about 80% is exported. The manufacture of copper ware is now receiving more attention in the empire and the percentage exported is not increasing with the increase of output.

Pahang Consolidated.—The total output of tin during the year amounted to 919 tons. The installation of a Diesel engine and pneumatic pumps is now under way and development work gives satisfactory indications for the future.

Export of Philippine Coal.—The shipment of Philippine coal from the islands was made by the East Batan Coal Company this month when the Mathilde carried a cargo of 1,700 tons to Hongkong for local consumption. It is understood that the freight rates to foreign ports are more favorable than by coastwise to Manila and export trade much more attractive for that reason.

Cowie Harbor Coal.—The output for the month of December was 2,500 tons of which 750 tons were shipped to Sandakan.

Straits Trading Company Smelting Works.—The report for the last half year contains the announcement that both the Penang Smelting Works and the Paulu Brani Works are now in the position to deal efficiently and economically with any increase in business. The net profits for the term amounted to $521,610.

FINANCIAL, COMMERCIAL AND MISCELLANEOUS

Japanese Tea Shipments.—From May to November, 1909, the shipments of tea abroad amounted to approximately 29,000,000 pounds.

Indo-China Rubber.—The area under cultivation is approximately 7,500 acres, and as local labor is short, Javanese are being imported.

Philippine Tobacco Bounties.—A Philippine executive order provides for one thousand pesos in bounty for each of the provinces of Occidental Negros, Capiz and Ilocos Norte for the encouragement of the industry. These sums will be divided into two parts, the first part being divided into three sub-divisions representing prizes of fifty, thirty and twenty per cent of the amount for competition in quality of leaf tobacco grown on areas cultivated between half a hectare and 10 hectares. The other half will be distributed likewise to planters cultivating less than half a hectare.

Philippine Lumbering Activity.—The Insular Lumber Company recently delivered one million feet of hardwood lumber in Manila from its mills in Negros for local use. It is the purpose of the company to increase its output to over a million and one half feet monthly.

Chinese Government Printing Plant.—It is the purpose of the authorities to instal a plant to cost about Tls. 100,000 after the German model and a German expert will be put in charge.

Changchun Hotel Completed.—This building has been completed at a cost of yen 170,000 and is large enough to accommodate 400 guests. The hotel throughout has every modern appointment.

Bank of Formosa Increases Capital.—This institution is contemplating the advisability of increasing its capital from yen 5,000,000 to yen 10,000,000.

Population of Dairen Increasing.—At the end of the year 1906 the total population of Dairen was 7,900 and at the end of 1909 it reached approximately 30,000.

Philippine Salary List.—There were 7,056 permanent employes in the Philippine Civil Service on January 1st, 1910, of whom 4,397 were Filipinos and 2,659 Americans. The American employes draw an average salary of ₱3,225.63 while the Filipino secures an average salary of ₱914.

German Brewery at Port Arthur.—A German firm has completed arrangements to establish a brewery at Port Arthur to compete with the Japanese product.—It is also proposed to establish branches at Dairen and Mukden.

Chingho Woolen Factory.—The Chinese Government has established a woolen factory at this point on the Peking-Kalgan Railway for the purpose of manufacturing military and naval uniforms. It is also proposed to make the institution an industrial training school for the natives.

New Rubber Companies.—The Sempah Rubber Estates, Ltd., £80,000, shares £1, 60,000 offered; Bradwell (F. M. S.) Rubber Estate, Ltd., £90,000, shares £1, 35,000 offered; Bujong Rubber Estate, Ltd., £40,000, shares £1, 26,000 offered; The Sungei Bahru Rubber Estates, Ltd., £75,000, shares £1, 55,000 offered, Changkat Serdang Rubber Estates, Ltd., $750,000 Straits Cur., shares $10, 43,000 shares offered; Kaybee Rubber Estates, Ltd., $350,000 S. Cur., shares, $1, 123,000 privately alloted; Sedenak Rubber Estates, Ltd., £100,000, £30,000 offered.

Eastern Bank Limited.—This institution has been incorporated with a capital of £1,000,000 in shares of £10, and will engage in exchange and local banking.

Java Sugar Industry.—The output of 180 sugar mills in Java during the year 1909 amounted to over 20,000,000 piculs, an increase of over 100,000 piculs compared with 1908. The prospects for 1910 indicate a similar increase for the year.

F. M. S. Rubber Development.—The report for the last three years of rubber exported which shows 1,990,000 pounds for 1907; 3,193,000 for 1908 and 6,100,000 for 1909 gives a striking illustration of the rapid growth of this industry now in the most flourishing condition.

Yokohama Municipal Budget.—The estimates for 1910-11 confine the expenditure to yen 2,140,000, of which about half is ordinary and the balance extraordinary.

University at Hankow.—Oxford and Cambridge are furthering a project to establish this institution at the initial cost of £50,000 to be supplemented five years later by an endowment of £200,000. A public subscription has been solicited.

Hongkong Engineers' Institute.—The new premises for this society were formally opened February 4th.

Bank of Japan Increases Capital.—This institution has decided to increase its capital from yen 30,000,000 to yen 60,000,000.

Dairen Branch of Specie Bank.—The new quarters of the Yokohama Specie Bank were occupied in December. The building cost in the vicinity of yen 300,000.

Offer for the Insular Cigar Company.—An American Syndicate made an offer of $4,000,000 for the business of this company located in Manila. It is understood that the offer was declined.

Cigar Box Factory for Manila.—Messrs. Bruning & Sons of Eanhoven, Holland, are contemplating the installation of a cigar box factory with a capacity of 100,000 boxes weekly. Local woods will be used, of which there is an abundance.

Foreign Trade of Korea.—The report for 1909 shows a total in value of yen 52,909,000 of which the imports exceeded the exports by about yen 20,000,000. The export trade showed an increase of over 2,000,000 yen while the imports fell off about 4,000,000 yen.

JAPANESE MANUFACTURING PLANTS.—The census taken by the Department of Agriculture shows 178 factories operated by the government throughout Japan. Of these 44 are machine shops and 124 manufacture foods and drink. The total number of employees is approximately 123,400.

KOREA'S BUDGET.—The estimates for the year 1910 as approved by the resident general include an expenditure of yen 20,915,678, of which yen 15,395,280 is ordinary and yen 5,520,398 extraordinary expenditure. The receipts estimated include yen 14,782,839 ordinary and yen 6,132,841 extraordinary. These figures show a decrease compared with the previous year.

JAPANESE CAPITAL INVESTED IN NEW UNDERTAKINGS.—From January to the end of November 1909, there were yen 120,000,000 invested in banking, railways, manufacturing plants and other enterprises.

SIAMESE TRADE.—The total foreign trade of Japan for the year ended March 31st, 1909, amounted to approximately $65,000,000 gold. Of this $28,038,548 represented the value of the imports and $36,778,426 the exports.

JAPANESE DOMESTIC BONDS.—An issue of domestic bonds to the amount of yen 100,000,000 will be issued at yen 95 for the conversion of the four per cent. bonds.

SIAMESE-INDO-CHINA POSTAL ORDER SERVICE.—Arrangements have been made for the interchange of international money orders between the two countries. The maximum amount that may be sent in one order is fixed at francs 1,000.

CHANGE IN MESSRS. KER BOLTON & CO.—According to the *London and China Express*, Messrs. Ker, Bolton and Co., of London and Glasgow, notify that the interest of Mr. Robert Jardine in the firm and its Eastern branches terminated on Dec. 31. The business will be continued by the remaining partners, Mr. R. J. Paterson, Mr. J. W. Murray, Mr. C. S. Weir, and Mr. James Graham, in conjunction with Mr. J. M. Beattie, formerly of Manila who has been admitted a partner. Mr. R. R. Reid and Mr. J. B. Reid have been admitted partners in the Philippine branches (Ker and Co., Manila, Iloilo, and Cebu), and Mr. R. S. Menzies and Mr. T J. Taylor in the Java and Singapore branches, Pitcairn, Syme and Co., Batavia, Sourabaya, and Samarang; and Syme and Co. Singapore. Mr. H. M. March retired from the Java and Singapore branches on Dec. 31.

OLD COMPANY INCORPORATED.—Richardson, Findlay & Co., Ltd., has been incorporated with a capital of £150,000 taking over the business of Richardson and Findlay in Glasgow, Findlay Richardson and Co. in Kobé and Yokohama, and Findlay and Co. in Iloilo and Manila. The signatories are R. E. Findlay, N. A. Black, J. Reid, W. G. Crum, all of 34 West George street, Glasgow, and J. Marshall, Kobé. It is a private company. The first directors are R. E. Findlay, N. A. Black, W. G. Crum, and J. Marshall.

KYOTO SILK SPINNING COMPANY LOAN.—It is announced that this company has arranged with the Yasuda Bank at Tokyo for the raising of a loan of yen 3,000,000 at a low rate for the purpose of redeeming the old debts of the company on which a high rate of interest is being paid.

GERMINAL CIGAR FACTORY TREBLES CAPITAL.—This successful company has increased its capital from ₱500,000 to ₱1,500,000 in order to improve the facilities of the factory to meet the increasing demand for its product occasioned largely by the passage of the Payne Bill.

LONDON, ENGLAND, METAL MARKET

The following are Friday's, January 7, prices of metals:—

COPPER	£ s. d.		£ s. d.
*Tough cake and Ingot	64 10 0	..	65 00 0
*Best Selected	65 0 0	..	65 10 0
*Electrolytic	65 0 0	..	65 10 0
*Sheets and sheathing	75 0 0	..	—
*Flat bottoms	78 0 0	..	—
STANDARD †Cash	61 1 3	..	61 3 9
STANDARD †Three Months	62 0 0	..	62 2 6
*Copper tubes, seamless per lb.	0 0 8¾	..	—
*Lake	65 10 0	..	66 0 0

* Less 3½ per cent. † Net.

ALLOYS.			
BRASS: Wire	0 0 7	..	—
,, Tubes (solid drawn)	0 0 7⅛	..	—
,, Sheets	0 0 7⅛	..	—

TIN.			
English ingots, f. o. b.	147 10 0	..	148 10 0
,, bars	148 10 0	..	149 10 0
,, refined	149 10 0	..	150 10 0
Straits... Cash	149 10 0	..	149 12 6
Straits... Three months	150 12 6	..	150 17 6
Australian spot	149 10 0	..	149 15 0
Banka (in Holland) Cash	151 10 0	..	—
Banka (in Holland) Three months	161 17 6	..	—

LEAD.			
Spanish or soft foreign	13 15 0	..	13 16 3
English pig, common	13 17 6	..	14 0 0
,, L. B.	14 7 6	..	—
,, sheet and bar lead	15 7 6	..	—
,, pipe	15 17 6	..	—
English red	16 10 0	..	—
,, white	18 10 0	..	—
,, patent shot	16 15 0	..	—

SPELTER.			
Silesian ordinary brands	23 5 0	..	23 7 6
,, special brands English Swansea	23 10 0	..	23 15 0
Sheet zinc	26 5 0	..	—

ANTIMONY.			
Antimony	27 10 0	..	31 0 0
,, Crude	13 0 0	..	13 10 0
,, Ore (basis 50%)	8 0 0	..	10 0 0

QUICKSILVER.			
Flasks, 75 lbs. warrants	9 15 0	..	—

ALUMINIUM.	Per ton.		Per ton.
98-99 per cent.	67 10 0	..	70 0 0

NICKEL.	Per ton.		Per ton.
98-99 per cent. guaranteed	167 10 0	..	171 10 0

PLATINUM.

Per oz. Troy, 120s. nominal and subject to negotiation.

SHIPMENTS OF CIGARS TO THE U. S. OF AMERICA.

DURING JANUARY 1910.

EXPORTERS	CASES	KILOS
Messrs. Castle Bros.-Wolf & Sons.	441	48,369
" Compañia Gral. de Tabacos	293	34,301
" Baer Senior & Co.'s Successors	160	24,076
" Walter E. Olsen & Co.	96	12,294
" Germann & Co. Ltd.	60	7,686 ½
" Philippine Co. Ltd	55	7,637
" J. Henrich	52	7,544
" La Germinal	46	6,811
" J. Sta. Marina, (La Insular)	21	2,158
" La Alhambra	15	1,852
" Meerkamp & Co.	15	1,748
" La Minerva	13	1,642
" Chiong Yu Nam	9	1,787
" W. H. Anderson & Co.	9	1,264
" Lambert & Springer	6	1,012
" La Urania	6	788
" El Oriente	6	737
" W. F. Stevenson & Co.	4	619
" Haddix & King	4	604
" E. B. Morris & Co.	3	247
" Sullivan & Francis	2	219
" H. W. Peabody & Co.	2	135
" Smith Bell & Co. Ltd	1	56
TOTAL	1319 cases	163,586½ Kos

HEMP STATISTICS, 30th DECEMBER, 1910.

(Courtesy of C. S. NICHOLSON, *Secretary, Manila Chamber of Commerce.)*

EXPORT OF HEMP, NOVEMBER, 1909.

Date	*Vessel*	*London*	*L'pool*	*Atlantic U.S.*	*Pacific East & California*	*Continent.*	*Australia*	*Other Pts.*	*Total Bales*
1909	Forward:—	248,014	116,843	547,636	116,460	57,271	18,243	29,234	1,153,701
Dec. 1	Duffield			22,700			1,975		22,700
" 3	Loongsang					100			100
" 4	Rubi					250		800	1,050
" 6	Ceasar			1,600					1,600
" "	Prinz Waldemar						80		80
" 7	Taming							200	200
" 9	Indravery clude (Cebu)			29,675					29,675
" 10	Ocean Monarch	10,400	2,337			850			13,587
" "	Yuengsang					74			74
" 11	Zafiro							450	450
" "	Eastern							90	90
" 13	Kaifong (Cebu)							50	50
" 12	Kremlin	10,032	3,400			600			14,032
" 14	Tean		200			300			500
" 18	Aymerich				3,361				3,361
" "	Yawata Maru	87						131	218
" 24	Antilochus				1,500				1,500
" "	Taming	1,203	140			650		25	675
" "	Yueng Sang					344		25	369
" "	Ocean Monach	9,243	3,225			550			13,018
" "	Zafiro					550		250	800
" 27	Indrani			2,225					2,225
" "	Kumanu Maru						980		980
" 28	I. de Panay	250				200			450
	Tean					100		175	275
" 29	Kaifong	50							50
" 30	Loong Sang	3,437	363			200			4,000
		218,[illegible]13	126,368	623,836	121,321	62,039	19,303	31,430	1.265

FAR EASTERN STOCKS AND QUOTATIONS

Courtesy of Messrs. Kadoorie & Co., Hongkong, December, 1909.

STOCK.	WHEN ESTABLISHED	CAPITAL	NO. OF SHARES	VALUE	PAID UP	RESERVE	AT WORKING ACCOUNT	DATE	LAST DIVIDEND.	Approximate Yield per cent per annum at Present Quotation	CLOSING QUOTATIONS
BANKS.											
Hongkong & Shanghai Banking Corporation	1865	$15,000,000	120,000	$125	$125	g £1,500,000 s $15,250,000 i $250,000	$2,001,819	30-6-09	Interim of £2 for account 1909, @ ex 1/9 ⅛=$22.72	4	990 sellers £91 /—
National Bank of China, Ld.	1891	£699,475	10) 99,925	£7	£6	c £4,099 $300,000	$30,552	31-12-08	$2 (London 3/6) for 1903	....	$73 buyers
MARINE INSURANCES.											
Canton Insurance Office, Ld.	1881	$2,500,000	10,000	$250	$50	$1,560,000 j $254,583 u $302,799	Nil.	31-12-08	$10 for 1908	7	$150 sales
North China Insurance Co., Ld.	1863	£150,000	10,000	£15	£5	g £125,000 s Tls. 225,000 u Tls. 335,253 f Tls. 146,586	Tls. 207,572	30-6-09	Final of 7/6 making 15/- for 1908.	....	Tls. 113 buyers
Union Ins. Society of Canton, Ld.	1867	$3,100,000	12,400	$250	$100	s $3,000,000 g £90,000 f $192,248 j £105,249 u $682,609	$2,464,901	31-12-08	Final of $17 making $47 for 1907, and interim of $30 for account 1908	5½	$910
Yangtsze Ins. Association, Ld.	1862	$1,200,000	12,000	$100	$60	$1,000,000 j $294,405 f $199,234	$707,637	31-12-08	$12 and bonus $3 for 1907	7	$230 buyers
FIRE INSURANCES.											
China Fire Ins. Co., Ld.	1870	$2,000,000	20,000	$100	$20	$1,000,000 x $438,668 f $13,802	$375,314	31-12-08	$6 and bonus $2 for 1907	7	$118 sellers
Hongkong Fire Ins. Co., Ld.	1868	$2,000,000	8,000	$250	$50	$1,438,173	$368,711	31-12-08	$27 for 1907	7¼	$365 sellers
SHIPPING.											
China & Manila Steamship Co., Ld.	1882	$750,000	1) 30,000	$25	$25		Dr $21,538	31-12-08	$1 for 1906	....	$8 sellers
Douglas Steamship Co., Ld.	1883	$1,000,000	20,000	$50	$50	$230,000 i $100,589	Nil.	30-6-09	$2½ for year ending 30-6-1908	....	$32 sellers
Hongkong, Canton & Macao Steamboat Co., Ld.	1865	$1,200,000	80,000	$15	$15	e $250,000 d. i. $617,500 f $119,267 $ 22,645	$21,170	30-6-09	Interim of $1¼ for a/c 1909	7¾	$31¾ sellers
Indo-China Steam Navigation Co., Ld. (Preferred) Do. Do. (Deferred)	1882	m £600,000	2) 60,000 2) 60,000	£5	£5	i £148,891	£15,162	31-12-08	6/- for 1907 on pref. shares only at ex. 1/9 11/16, $3.154	....	$63 buyers
"Shell" Transport & Trading Co., Ld.	1898	£ 2,000,000	2,000,000	£1	£1	£720,000 i £100,000	£192,994	31-12-08	Final of 2/- for 1908 & int. of 1/- for a/c 1909	....	70/- buyers
"Star" Ferry Co., Ld.	1898 1900	$200,000	10,000 10,000	$10 $10	$10 $5	$65,000 i $48,980	$31,21	30-4-09	$1.00 50 cts. for year ended 30-4-09	4 3½	$26 $14½
REFINERIES.											
China Sugar Refining Co., Ld.	1878	$2,000,000	20,000	$100	$100	e $350,000 r $56,848	Dr. $5858	31-12-08	$5 for year ending 31-12-08	3¼	160 sales & buyers
Luzon Sugar Refining Co., Ld.	1882	$700,000	7,000	$100	$100	none	Dr. $135,893	31-12-08	$3 for 1897	....	$22½ buyers
Perak Sugar Cultivation Co., Ld.	—	Tls. 350,000	7,000	Tls. 50	Tls. 50	Tls. 100,000	Tls. 6,302	31-8-09	Tls. 10 for year ending 31-8-09	....	Tls. 460 buyers
MINING.											
Chinese Engineering & Mining Co., Ld.	1901	£1,000,000	1,000,000	£1	£1	d £215,000 h £12,289	£1,435	28-2-09	Final of 1/6 making 3/- for 09	7	Tls. 17
Headwaters Mining Co.	1908	₱600,000	28) 60,000	₱10	₱10				First year		$10 buyers
Raub Australian Gold Mining Co., Ld	1892	£200,000	150,000 50,000	£1 £1	18-10 £1	£4,873	Dr. £2,191	31-3-08	No. 12 of 1/-=48 cents	....	$5½ buyers
DOCKS, WHARVES AND GODOWNS.											
Fenwick (Geo.), & Co., Ld.	1889	$450,000	z 18,000	$25	$25	$42,986	Dr $7,421	31-12-08	$1¾ for year ending 31-12-06	....	$10
Hongkong & Kowloon Wharf & Godown Co., Ld.	1886	$3,000.000	60,000	$50	$50	$550,000 t $26,806 s $40,000	$30,102	31-12-08	Final of $1½ making $3½ for 1907	....	$61 sellers
Hongkong & Whampoa Dock Co., Ld.	1866	$2,500,000	50,000	$50	$50	i $88,442 v $221,000	$345,162	30-6-09	Interim of $1½ for account 1909	..	$52 buyers
Shanghai Dock & Engin'g Co., Ld.	1906	Tls. 5,570,000	13) 55,700	Tls. 100	Tls. 100	Tls. 1,000,000	Tls. 6,261	30-4-09	Interim of Tls. 2½ for account 1910	6¼	Tls. 82 buyers
Shanghai & Hongkew Wharf Co., Ld.	1902	Tls. 3,600,000	36,000	Tls. 100	Tls. 100	b Tls. 697,257 r Tls. 50,000 e Tls. 125,000	Tls. 6,261	31-12-08	Final of Tls. 6 making Tls. 10 for 1908	7	Tls. 125
LANDS, HOTELS AND BUILDINGS.											
Anglo-French Land Investment Co., Ld.	1906	Tls. 2 500,000	3) 25,000	Tls. 100	Tls. 100	Tls. 35,000	Tls. 4,314	29-2-09	Tls. 6 for year ending 29-2-09	5¾	Tls. 103 sales
Central Stores, Ld.	....	$751,845	16) 50,123	$15	$15	n. $1,000	$24,641	31-12-08	$1.20 on old & 60 cts. on first new issue	....	$16 buyers
Hongkong Hotel Co., Ld.	1866	$600,000 $400,000	12,000 8,000	$50 $50	$50 $25	$648,975 r $140	$19,272	30-6-09	Interim of $2.40 old and 40 cents new for a/c 1909	....	$87 buyers $57 new i. b.
Hongkong Land Investment & Agency Co., Ld.	1889	$5.000,000	50,000	$100	$100	e $250,000	$26,475	31-12-09	Final of $3½ making $7 for year ending 31-12-1909	6½	$99 sellers
Humphreys' Estate & Finance Co., Ld.	1887	$1,500,000	150,000	$10	$10	i $222,172 20) $43,261	$5,486	31-12-08	60 cents for 1908	7½	$7½ sellers
Kowloon Land & Bldg. Co., Ld.	1889	$300,000	6,000	$50	$30	none	$278	31-12-08	$1½ for 1908	5	$29 buyers
Shanghai Land Investment Co., Ld.	1888	Tls. 3,900,000	78,000	Tls. 50	Tls. 50	Tls. 1,523.045 e Tls. 300,000	Tls. 142,404	31-12-08	Interim of Tls. 3 for 1909	6¾	Tls. 117½ sellers
West Point Bldg. Co., Ld.	1889	$625,000	12,500	$50	$50	none	$1,968	31-10-09	Final of 1½ for 1909	8¾	$42½ ex div.
COTTON MILLS.											
Ewo Cotton Spinning & Weaving Co., Ld.	1895	Tls. 1,000,000	5) 20,000	Tls. 50	Tls. 50	Tls. 250,000 Tls. 40,098	Tls. 10,991	31-7-09	Tls. 11 for year ended 31-10-09	8½	Tls. 131 buyers
Hongkong Cotton Spinning, Weaving & Dyeing Co., Ld.	1901	$1,250,000	125,000	$10	$10	e $20,000	$26,297	30-7-09	50 cents for year ending 31-7-08	..	$6 sales

FAR EASTERN STOCKS AND QUOTATIONS—(CONTINUED.)

STOCK.	WHEN ESTABLISHED	CAPITAL.	NO. OF SHARES.	VALUE.	PAID UP.	RESERVE	AT WORKING ACCOUNT.	DATE.	LAST DIVIDEND.	Approximate Yield per cent. per annum at Present Quotation.	CLOSING QUOTATIONS
International Cotton Manufacturing Co., Ld.	1895	Tls. 750,000	6) 10,000	Tls. 75	Tls. 75	Tls. 175,000	Tls. 8,372	30-9-09	Tls. 7½ for year ending 30-9-09	----	Tls. 68
Laou-kung-mow Cotton Spinning & Weaving Co., Ld.	1895	Tls. 800,000	8,000	Tls. 100	Tls. 100	none	Tls. 4,829	31-12-08	Tls. 4 for 1908	----	Tls. 76
Soy Chee Cotton Spinning Co., Ld	1895	Tls. 1,000,000	2,000	Tls. 500	Tls. 500	: Tls. 31,172	Tls. 15,911		Tls. 50 for 1906	----	Tls. 375
MISCELLANEOUS.											
Bell's Asbestos Eastern Agency, Ld.	1895	£5,377.10s	11) 8,604	12/6	12|6	£1,500	£682	31-12-08	15% for 1908	----	$10
China-Borneo Co., Ld.	1903	$720,000	8) 60,000	$12	$12	$40,000	Nil.	31-12-08	$1.20 for 1908	----	$12
China Light & Power Co., Ld. Do. do. Special Shares	1901 1907	$550,000	50,000 17)50,000	$10 $1	$10 $1	none	$61,138	28-2-07	60 cents for year ending 28-2-06	10	$6¼ buyers
China Provident Loan & Mortgage Co., Ld.	1898	a $1,250,000	7) 125,000	$10	$10	$100,000	$3,407	31-12-08	80 cents for 1908	----	$8½ ex div. buy.
Dairy Farm Co., Ld.	1896	$300,000	40,000	$7½	$6	l $10,000 $10,000	$1,850	31-7-09	$1.20 for year ending 31-7-09	8½	$16¼ buyers
Green Island Cement Co., Ld.	1889	$4,000,000	400,000	$10	$10	$13,000	$3,756	31-12-09	Interim of 35 cents for account 1909	10	$7¼ sales
H. Price & Co., Ld	1907	$120,000	19) 15.000	$10	$10	$5,000	$670	31-12-08	80 cents for year ending 31-12-08	8	$12
Hongkong Electric Co., Ld.	1889	$600,000	60,000	$10	$10	none	$5,195	29-2-09	$1.00 and bonus 20 cents for year ending 29-2-09	6	$20¼ buyers
Hongkong Ice Co., Ld.	1881	$125,000	5,000	$25	$25	k $150,000	$7,616	31-12-08	Interim of $2 for a|c 1909	10	$175 sellers
Hongkong Rope Manufacturing Co., Ld.	1883	$600,000	$60,000	$10	$10	$20.000	$8,790	31-12-08	Interim of $1 for a|c 1909	8½	$22½ sellers
Maatschappij tot Mijn-, Boschen Landbouwexploitatie in Langkat	1902	Gs. 2,500,000	25,000	Glds. 100	Glds. 100	Tls. 547,500 f Tls. 63,914 21 Tls. 547,500	Tls. 316,682	31-10-08	Final of Tls. 12½ and bonus of Tls. 7½ for 1909	8½	Tls. 1020 sales
Peak Tramways Co., Ld. Do. (New)	.1907	$750,000	25,000 50,000	$10 $10	$10 $1	$20,000	$2,204	30-4-09	80 cents on fully paid shares & 8 cents on $1 paid shares for year ending 30-4-09	6 3	$13 sellers $1.30
Philippine Co., Ld.	1904	$750,000	75,000	$10	$10	none	Ps. 18.640	31-12-08	None	----	$10 buyers
Robinson Piano Co., Ltd.	1900	$200,000	22) 4,000	$50	$50	$5,000	$61,138	31-8-08	6% for ½ year ending 30.9.07	----	$50
Shanghai-Sumatra Tobacco Co., Ld.	1902	Tls. 600,000	9) 30,000	Tls. 20	Tls. 20	Tls. 24,820 w Tls. 75,000	Tls. 5,250	31-10-08	Final of Tls. 5 making Tls. 8 for 1908	4¾	Tls. 152 buyers
South China Morning Post, Ld.	1903	$150,000	6,000	$25	$25	none	Dr. $56,602	31-8-08	None	----	$22½ sellers
Steam Laundry Co., Ld.	1902	$100,000	20,000	$5	$5	none	$63	31-5-09	40 cents for year ending 30-5-09	7	$4¾
Union Waterboat Co., Ltd.	1905	$500,000	15) 50,000	$10	$10	none	$172	31-12-08	60 cents for year-end. 31-12-1908	5	$10
United Asbestos Oriental Agency, Ld.	1896	$100,000	10,000	$10	$4	$46,000	$342	31-5-09	60 cents per ordinary share for year ending 31-5-09	6¼	$12½ buyers
Watson (A. S.) & Co., Ld.	1886	$900,000	90,000	$10	$10	e) $300,000 $25,000	$2,613	31-12-08	Final of 30 cents making 60 cents for 1908	6¾	$7 sellers
Weismann Limited	1904	$30,000	3,000	$10	$10	$12,250	$67	31-7-09	10 per cent for year endg. 31.7.08.	----	$10 sales
William Powell, Ld.	1901	$105,000	15,000	$7	$7	none	$782	30-6-09	Final of 30 cents making 80 cents for year ending June 30th 1906	----	$3 sellers
RUBBERS											
Allagar Rubber Estates, Ltd.	1909	£85,000	29) 750,000	2|-	2|-	----	----	----	----------	----	5|9 buyers
Anglo-Malay Rubber Co., Ltd.	1905	£150.000	1,500,000	2|-	2|-	----	----	----	Interim of 12½% for a|c 1909	----	22|6
Balgownie Rubber Estate, Ltd.	1905	†† $200,000	‡‡ 20,000	†† $10	†† $10	$7,400	$11,205	31-3-09	20% Interim for 1909	----	$142½ [S'pore]
Castlefield Rub. Ld., [fully pd.]	1906	£35,000	27) 32.650	£1	£1	none	----	----	----------		87|6
Damansara (Selangor) Rub. Co.	1906	£110,000	25 110,000	£1	£1	nil.	£2,220	31-12-08	2|6 for 1909	----	115|-
Golconda Malay Rubber Co.	1907	£80,000	26 80,000	£1	£1	nil.	nil.	----	----------	----	87|6
Highland & Lnd. Para R. Co. Do. Do. [fully paid] Do. Do. [partly paid]	1906	£310,000	=181,454 123,546	£1 £1	£1 15|-	£8,784	----	----	7½% for 1909 (interim.)	----	100|- Nominal
Kamuning (Perak) Rb. & Tin Co. do do A Shares do do B Shares	1909	£200,000	950,000 105,000	2|- £1	1|- £1	nil. ----	nil. 1,82	---- ----	---------- ----------	---- ----	8|6 Nominal.
Kuala Lumpur Rubber Co., Ltd.	1906	£180,000	180,000	£1	£1	£4,000	----	----	3% for year ending 30-6-08	----	140|- buyers
Linggi Plantations, Ltd. (ord.) Do. Do. (7% pref.)	1895 Reconst	£100,000	×900,000 10,000	2|- £1	2|- £1	----	----	----	Interim of 40%=9d for a|c 1909.	----	37|6 Nominal
Ledbury Rubber Estates Ltd. Do. Do. (contrib.)	1908	£125,000	§§ 60,000 §§ 40.000	£1 £1	£1 7|6	----	----	----	----------	----	67|- 39|6
Sagga Rubber Co. Ld.	1903	£200,000	24) 20,000	£1	£1	nil.	nil.		----------	----	160|-
Sandycroft Rubber Co.	1904	$100,000	50,000	$2	$2	$20.000	$1,275	31.1.08	Interim of 30% for 1909	----	30 buyers
Sekong Rubber Co., Ld	1908	£80,000	27) 80,000	£1	12|6	nil.	nil.	----	----------	----	28|6
Shelford Rubber State Ld.	1906	£65,000	65,000	£1	£1	nil.	£836	31.12.08	3% for 1908	----	51|3
Singapore & Johore Rb. Co., Ld.	1903	$250,000	2,500	$100	$100	nil.	nil.	----	----------	----	500 buyers
Sungei Choh. Rb. State Co., Ld.	1907	£45,000	45,000	£1	17|-	nil.	nil.	----	----------	----	73|6
Sungei Kapar Rubber Co.	1906	£110,000	23) 110,000	£1	£1	nil.	£3,448	31.12.	8½% Interim for 1909	----	105|-

LOANS AND DEBENTURES.	AGENTS FOR THE LOAN.	AMOUNT OF LOAN.	PAR VALUE.	OUTSTANDING BONDS.	WHEN PAYABLE.	CLOSING QUOTATIONS.	
China Government, 7 per cent. Silver Loan 1886 E	Hongkong & Shanghai Banking Corporation.	Tls. 767,200	Tls. 250	1914	‖Mar. 31st and Sept. 30th each year until Mar. 31st, 1917	par.	
Hongkong Hotel Company, Ltd., 6 per cent. Mortgage Debentures of 1899 ‡		$750,000	$500	§ all	Half yearly, June 30th and December 31st	par	
Shanghai & Hongkew Wharf Company, Ltd., 6 per cent. Debentures of 1902		Tls. 543,900	Tls. 100	----------	Half yearly, June 30th and December 31st	Tls. 103½	Plus
Astor House Hotel Company, Ltd., 8 per cent. Debentures of 1903		Tls. 500,000	Tls. 100	----------	Half yearly, January 1st and July 1st	102½	interest
Chinese Engineering & Mining Co., Ltd., 6 per cent. Debentures of 1903 †	----------	£500,000	¶	£431,960	Half yearly, June 30th and December 31st	par.	
International Cotton Manufacturing Co., Ltd. 7% Debentures of 1901	Russo Chinese Bank	Tls. 500,000	Tls. 100	‖	Half yearly, March 31st and Sept. 30th	Tls. 97½.	

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a Authorized capital $2,000,000.
b Building Reserve Account.
c Capital Reserve Fund.
d Depreciation Fund.
e Equalization of Dividend Fund.
f Exchange and Investment Fluctuation Account.
g Gold Reserve Fund
h Exchange Reserve Account.
i Insurance Fund.
j Reinsurance Fund.
k Contingencies Account.
l Legal Reserve Fund.
m Authorized Capital
n Sinking Fund.
o Raw Sugar Reserve Account.
p Premium on New Issue.
q Boiler Repairs and Renewals Account
r Repairs and Renewals Account.
s Silver Reserve Fund.
t Depreciation and Repair Account
u Underwriting Suspense Account.
v Special account
w Special Works Fund.
x Extra Reserve Fund.
y 72,560 owned by the Company.
z 7,200 shares unissued.
1 4,000 shares unissued.
2 First issue of 60,000 of which 10,411 unallotted.
3 5,000 shares unissued.
4 4,480 shares unissued.
5 5,000 shares unallotted.
6 1,616 shares unallotted.
7 75,000 shares unissued.
8 14,000 shares unissued.
9 17,000 shares unissued.
10 40,453 shares actually issued.
11 7,688 shares actually issued.
12 4,200 shares unissued.
13 500 shares unissued.
14 399 shares unissued.
15 22,277 shares unissued.
16 10,000 shares unissued.
17 Special shares are entitled to half of the profits.
18 Capital contributed by Chinese Government Kuping Tls. 5,000,000.
19 12,000 issued only.
20 Typhoon and Floods Insurance Fund
21 Special Cash Reserve.
22 1000 shares unissued.
23 10,000 shares unissued.
24 4595 part paid shares.
25 7,500 shares unissued.
26 10,000 shares unissued.
27 2.350 shares unissued.
28 25,000 shares unissued,
29 10,000 shares unissued.
*Based on last year's dividend.
** Based on present dividend.
§ 216 held by the Company.
‖ Only Tls. 134,000 taken up.
¶ In certificates of £20 and £100.
‡ Redeemable in 10 years, or at the option of Comp. the Company giving 6 months notice.
† Redeemable at par at rate of £10,000 per annum from 31st December 1903 to 31st December 95.
*** Redeemable at par on 30th June, 1915.
Dr. Deficit.
†† Singapore dollars.
‡‡ 4,880 shares unissued.
× 16,756 shares unissued.
§§ 25,000 shares unissued.
= 4140 shares unissued.

ADDITIONAL SHANGHAI SHARE QUOTATIONS

STOCK	CLOSING QUOTATIONS	HIGHEST AND LOWEST PRICES DURING THE WEEK	CAPITAL	NO. OF SHARES	VALUE	PAID UP	RESERVE	LAST DIVIDEND	WHEN PAID
Oriental Consolidated Mining Co., Ltd	27s. 6d.		G. $5,000,000	500,000	G. $10	G. $10	none	Interim of Gold .50 for 1909	June 30, 1909
Vulcan Iron Works, Limited	Tls. 400		Tls. 500,000	1,000	Tls. 500	Tls. 500	—	Tls. 50 for year ended 31.8.06	Nov. 1, 1906
Yangtsze Wharf & Godown Co., Limited	Tls. 125 nominal		Tls. 250,000	2,500	Tls. 100	Tls. 100	Tls. 50,000	Tls. 15 for 1908	April 1, 1909
Wei-hai-wei Land & Building Co., Limited	Tls. 10 nominal		Tls. 91,850	3,674	Tls. 25	Tls. 25	—	—	—
Union Estate & Investment Co., Limited	Y. 105 sales		Y. 1,000,000	10,000	Y. 100	Y. 100	—	First year	—
Hotel des Colonies Company, Limited	Tls. 9 sellers		Tls. 112,500	9,000	Tls. 12½	Tls. 12½	Tls. 29,783	6% for 1907	May 29, 1908
Kalee, Limited	$100 nominal		$400,000	4,000	$100	$100	—	2% for 1908	July 3, 1909
Anglo-German Brewing Co., Limited	$85 buyers		$100,000	4,000	$100	$100	none	$7 for 1907	Mar. 12, 1908
Butler Tile Works, Limited	Tls. 50 nominal		Tls. 60,000	1,200	Tls. 50	Tls. 50	—	Tls. 3 for year ending 31.3.09	June 8, 1909
Major Bros., Limited	Tls. 40 sellers		Tls. 300,000	6,000	Tls. 50	Tls. 50	—	—	—
Oriental Ice Company, Limited	Tls. 50		Tls. 130,000	2,600	Tls. 50	Tls. 50	—	First year	—
Scharffs Oil and Bone Mills, Ltd	Tls. 50		Tls. 200,000	4,000	Tls. 50	Tls. 50	—	First year	—
Shanghai Ice Company, Limited	Tls. 13 sales		Tls. 200,000	8,000	Tls. 25		—	3% for 1907	Mar. 14, 1908
Shanghai Oil Co., Limited	Tls. 25		Tls 175,000	7,000	Tls. 25	Tls. 25	—	First year	—
Campbell, Moore & Co., Limited	$10 buyers		$12,000	1,200	$10	$10	$9,000	$3 for 1905	Apr. 2, 1906
Dunning & Company, Limited	$50 sellers		$100,000	2,000	$50	$50	—	$5 year ending 28.2.08	Apr. 15, 1908
J. Llewellyn & Co., Limited	$50 buyers		$72,000	1,200	$60	$60	—	7.20 for 1908	Apr. 1, 1909
Lane, Crawford & Company	$137½ sales		$250,000	2,500	$100	$100	—	Final of 3% making 6% for 1908	June 8, 1909
Mondon (E. L.) Limited	Tls. 6 buyers	137½	Tls. 225,000	9,000	Tls. 25	Tls. 25	none	—	—
S. Moutrie & Company, Limited	$48 sellers		$250,000	5,000	$50	$50	—	$4 for year ended March 31, 1908	June 18, 1908
Weeks & Company, Limited	$26½ buyers		$400,000	20,000	$20	$20	$40,000	Final of $1.20 making $2 for 1908	May 20, 1909
Dominion Rubber Co., Limited	Tls. 4		Tls. 225,000	22,500	Tls. 10	Tls. 4	—	First year	—
Kalumpong Rubber Co., Ltd	Tls. 42 sellers		Tls. 700,000	14,000	Tls. 50	Tls. 50	** Tls. 11,844.48	6% for 1907	Nov. 29, 1908
Senawang Rubber Estates Company, Limited	Tls. 100		Tls. 250,000	2,500	Tls. 100	Tls. 100	—	—	—
Senawang Rubber Estates Company, New	Tls. 75				Tls. 100	Tls. 75			
Tebong Rubber and Tapioca Estate, Limited	20s.		£76,000	76,000	£1	£1	—	—	—
Eastern Fibre Co., Limited	Tls. 10 nominal		Tls. 300,000	30,000	Tls. 10	Tls. 10	—	1| ex. 2|6=Tls. 0.40 for 1908	August 5, 1909
Shanghai Mercury, Limited	Tls. 50 buyers		Tls. 105,500	2,100	Tls. 50	Tls. 50	—	Final of 6% making 10% for year ended 30.4-08	June 29, 1908
Shanghai Mutual Telephone Co., Limited	Tls. 62 buyers		Tls. 675,000	13,500	Tls. 50	Tls. 50	—	Tls. 3 for 1907	June 28, 1908
China Export, Import & Lumber Company, Limited	Tls. 78 nominal		Tls. 350,000	500	Tls. 100	Tls. 50	—	10 p. c. for year ending 29.2.08	May 1, 1908
China Printing Co., Limited	Tls. 42½		Tls. 750,000	1,500	Tls. 50	Tls. 50	—	7% 1908	Apr. 18, 1909
Dallas Horse Repository Co., Ltd	Tls. 25 nominal		Tls. 250,000	5,000	Tls. 50	Tls. 50	—	—	—
Hirano Mineral Water Co., Ltd.	Y. 15 sales		Y. 125,000	5,000	Y. 25	Y. 25	—	{10%=yen 2½ for year ending 30th Sept. 08 Y. 1.20 for year ended Feb. 29}	Apr. 26, 1909
E. E. Porter & Co., Limited	$50		$100,000	2,000	$50	$50	—	$6 for 1907	Apr. 22, 1908
Shanghai Electric & Asbestos Company, Limited	$20 sales		$125,000	5,000	$25	$25	—	8% for year ended Feb. 28, 09	June 21, 1909
Shanghai Electric Construction Company, Limited	£11 buyers	£11	£300,000	30,000	£10	£10	—	First year	—

DEBENTURES

LOANS	PRICE—PLUS ACCRUED INTEREST	AMOUNT OF LOAN	OUTSTANDING	NOMINAL VALUE	RATE OF INTEREST	WHEN PAYABLE
Shanghai Municipal Debentures 1892	Tls. 92½	Tls. 50,000	Tls. 45,400	Tls. 100	5 %	June & Dec.
do 1893	,, 96	,, 125,000	" 32,000	" 100	5½ ,,	Do
do 1894	,, 104½	,, 105,000	" 60,000	" 100	6 ,,	Do
do 1895	,, 92½	,, 115,000	" 32,600	" 100	5 ,,	Do
do 1896	,, 92½	,, 140,000	" 131,800	" 100	5 ,,	Do
do 1897	,, 92½	,, 268,800	" 268,400	" 100	5 ,,	Do
do 1898	,, 104½	,, 300,000	" 60,000	" 100	6 ,,	Do
do 1900	,, 96	,, 33,900	" 31,700	" 100	5½ ,,	Do
do 1901	,, 104½	,, 250,000	" 200,000	" 100	6 ,,	Do
do 1902	,, 104½	,, 150,000	" 150,000	" 100	6 ,,	Do
do 1903	,, 101½	,, 490,500	" 490,500	" 100	6 ,,	Do
do 1904	,, 104½	,, 214,500	" 214,500	" 100	6 ,,	Do
do 1905	,, 104½	,, 320,000	" 320,000	" 100	6 ,,	Do
do 1907	,, 104½	,, 250,000	" 250,000	" 100	6 ,,	Do
Chinese Imperial Government Loan 1886 E	,, 250	,, 767,200	" 354,400	" 250	7 ,,	Mar. & Sept
Shanghai Land Investment Co., Debentures 1890	,, 102	,, 250,000	" 250,000	" 100	6 ,,	May & Nov.
do 1892	,, 96	,, 250,000	" 250,000	" 100	5½ ,,	June & Dec.
do 1894	,, 101	,, 250,000	" 250,000	" 100	6 ,,	Mar. & Sept.
do 1896	,, 92½	,, 250,000	" 250,000	" 130	5 ,,	June & Dec.
do 1900	,, 102	,, 250,000	" 250,000	" 100	6 ,,	April & Oct.
do 1901	,, 102	,, 250,000	" 250,000	" 100	6 ,,	June & Dec.
do 1901	,, 96	,, 100,000	" 100,000	" 100	5 ,,	May & Nov.
do 1902	,, 102	,, 400,009	" 400,000	" 100	6 ,,	June & Dec.
do 1905	,, 102	,, 250,000	" 250,000	" 100	6 ,,	Do
Shanghai Waterworks Co., Debentures 1894	,, 103	,, 100,000	" 100,000	" 100	6 ,,	Mar. & Sept.
do 1896	,, 92½	,, 100,000	" 100,000	" 100	5 ,,	June & Dec.
do 1899	,, 103	,, 50,000	" 50,000	" 100	6 ,,	Do
do 1900	,, 103	,, 100,000	" 100,000	" 100	6 ,,	Mar. & Sept.
do 1902	,, 103	,, 100,000	" 100,000	" 100	6 ,,	Do
do 1903	,, 103	,, 100,000	" 100 000	" 100	6 ,,	June & Dec.
Perak Sugar Cultivation Co., Debentures 1902	,, 101	,, 200,000	" 200,000	" 100	7 ,,	April & Oct.
Shanghai Gas Co., Debentures 1897	,, 92½	,, 100,000	" 100,000	" 100	5 ,,	Do
do 1899	,, 102	,, 1,000,000	" 100,000	" 100	6 ,,	May & Nov.
do 1900	,, 102	,, 2,000,000	" 200,000	" 100	6 ,,	June & Dec.
Shanghai and Hongkew Wharf Co., Debentures 1902	,, 100½	,, 799,800	" 799,800	" 100	6 ,,	Do
Astor House Co., Debentures 1905	,, 103	,, 500,000	" 500,000	" 100	7 ,,	Do
British Municipal Council, Hankow 1901	Sh. ,, 105	H'kow Tls 100,000	H'kow Tls 100,000	" 100	7 ,,	June & Dec.
Shanghai Club Debentures 1907	,, 96	Tls. 170,000	Tls. 170,000	" 100	6 ,,	Do
Country Club Debentures	,, 97	,, 139,000	" 139,000	" 100	6 ,,	Do
do 1907	,, 97	,, 92,000	" 92,000	" 100	6 ,,	Do
Lane Crawford & Co., Debentures 1907	,, 100	,, 110,000	" 110,000	" 100	7 ,,	Mar. & Sept.
Anglo-French Land Debentures 1908	,, 102½	,, 250,000	" 250,000	" 100	6 ,,	June & Dec.

SINGAPORE SHARE QUOTATIONS

(Courtesy Messrs. Fraser & Co., Brokers, Singapore, February, 1910).

Date of Formation	Capital	Capital paid up	No. of Shares Issued	Issue Value	Paid up	Reserve	Last Dividend	Name	Buyers.	Sellers.
								MINING		
1903	$300,000	300,000	30,000	10	10	......	12% for year ending 31-3-09	Belat Tin Mining Co., Ltd.	6.75	7.00
1907	$300,000	225,000	22,500v	10	10	......	......	Bruang Ltd.	5.25	5.40
1901	$600,000	600,000	60,000	10	10	25,000	10% for year ending 30-4-08	Bruseh Hydraulic Tin Mining Co., Ltd.	6.50	7.00
1903	£600,000	444,200	444,200a	1	1	......	......	Duff Development Co., Ltd.	7.50	7.75
1907	$400,000	375,000	37,500b	10	10	......	......	Kanaboi, Ltd.	2.00	2.35
1901	£60,000	60,000	60,000	1	1	......	2/- interim for 1909	Kinta Tin Mines, Ltd.	14.50	15.00
1906	£100,000	100,000	100,000	1	1	......	......	Kledang Tin Mining Co., Ltd.	1.50	1.75
1905	$150,000	99,000	9,900c	10	10	6,485.68	35% for year ending 31-12-07	Kuantan Tin Mining Co., Ltd.	3.00	3.25
1906	£120,000	120,000	120,000	1	1	......	......	Lahat Mines Ltd.	8.00	8.50
1906	£30,000	30,000	30,000	1	1	......	......	Malaya and Siam Corporation, Ltd.	---	5/-
1906	$450,000	450,000	45,000	10	10	......	......	Malacca Tin Dredging Co., Ltd.	2.50	2.75
1906	£250,000	179,500	500,000e	5/-	5/-	......	......	Pahang Consolidated Co., Ltd.	6/3	7/9
1907	£100,000	80,000	80,000f*	1	1	......	......	Pengkalen, Ltd	6.75	7.25
1904	£100,000	80,000	80,000	1	1	......	......	Pusing Bahru Tin Mines, Ltd	8.50	8.75
1904	£120,000	100,000	100,000d	1	1	6,000	45% for year ending 30-6-07	Pusing Lama Tin Mines, Ltd	3.50	4.00
1907	$450,000	300,000	30,000d*	10	10	......	......	Rahman Hydraulic Tin, Ltd.	9.00	9.25
1905	£27,000	27,000	27,000	1	1	......	1/- for 1907	Rambutan, Ltd	10.00	10.50
1892	£200,000	191,250	50,000	1	1	4,873	1/- paid January, 1901	Raub Aust. Gold Ming. Co., Ltd,	4.25	4.75
			150,000	1	18/10	......	1/- " " "	" " " *Contributory*	3.75	4.25
1905	£40,000	40,000	40,000	1	1	......	......	Redhills Tin Mining Co., Ltd	3.50	3.75
1900	$110,000	110,000	22,000	5	5	......	3% for year ending 22-1-09	Royal Johore Tin Mining Co., Ltd	1.25	1.35
1907	$550,000	500,000	50,000l*	10	10	......	......	Salak South, Ltd.	5.00	5.50
1907	£80,000	80,000	80,000	1	1	......	......	Sempam Tin Mines, Ltd	2.35	2.50
1906	$850,000	850,000	85,000	10	10	25,000	5% interim for 1909	Serendah Hydraulic Tin Ming. Co., Ltd	7.50	7.75
1899	$230,000	230,000	23,000	10	10	......	3% for ½ year ending 31-12-08	Sipiau Tin Co., Ltd.	1.50	1.75
1909	$200,000	$150,000	15,000	10	10	......	......	Sungei Gau Tin Mining Co., Ltd	4.50	5.00
1907	£90,000	70,000	70,000w	1	1	......	1/6 interim for 1909	Tekka, Limited.	20.50	21.00
1906	£150,000	150,000	150,000	1	1	......	1/- interim for 1909	Tongkah Harbour Tin Dredging Co., Ltd.	15.00	15.50
1902	£160,000	160,000	160,000	1	1	......	2/- interim for 1909	Tronoh Mines, Ltd	13.50	14.00
								RUBBER		
1909	£85,000	75,000	750,000x*	2/-	2/-	......	......	Allagar Rubber Estates, Ltd	4/10½	5/-
1909	$120,000	105,000	105,000e‡	1	1	......	......	Alor Gajah Rubber Estate, Ltd	2.00	2.05
1909	$750,000	600,000	140,000b‡	5	5	......	......	Ayer Panas Rubber Estates, Ltd.	7.00	7.25
1905	£150,000	150,000	1,500,000	2/-	2/-	......	25% interim for 1909	Anglo-Malay Rub. Co., Ltd.	1.2.3	1.3.3
1905	$200,000	151,200	15,120c*	10	10	7,400	20% interim for 1909	Balgownie Rub. Estate, Ltd	125.00	140.00
1909	£50,000	35,250	470,000e*	2/-	1/6	......	......	Batang Malaka Rubber Estates, Ltd.	2/3	2/6
1904	£30,000	20,187 10/-	19,000 4,750f	1 1	1 5/-	....	10% for year ending 31-12-08	Batu Caves Rub. Co., Ltd.	8.1.0	8.6.9
1906	£80,000	70,000	70,000s*	1	1	......	5% for year ending 31-3-09	Batu Tiga (Selangor) Rubber Co., Ltd.	3.8.6	3.10.6
1909	£100,000	68,908	57,816	1	1	......	......	Bukit Kajang Rubber Estates, Ltd	2.11.0	2.12.0
			22,184x*	1	10/-	......	......	" " " *Contributory*	1.15.0	1.16.0
1907	£30,000	22,500	18,000k*	1	1	......	......	Bukit Lintang Rubber Estates, Ltd	3.12.6	3.15.0
			6,000	1	15/-	......	......	" " " *Contributory*	3.2 6	3.5.0
1903	£70,000	66,700	66,700g‡	1	1	2,000	15% interim for 1909	Bukit Rajah Rubber Co., Ltd.	10.15.0	11.0.0
1906	£35,000	30,000	30,000	1	1	......	......	Castlefield (K.) R. Estate, Ltd.	4.5.0	4.7.6
1910	$750,000	700,000	70,000	10	10	......	......	Changkat Serdang Estates. Ltd	13.00	13.25
1909	200,000	62,500	12,500‡c	10	5	......	......	Cheras Rubber Estates, Ltd	8.50	9.00
1909	£225,000	175,000	1750,000d	2/-	2/-	......	......	Chersonese (F.M.S.) Estates, Ltd	3/10½	4/-
1904	£16,000	16,000	100,000	2/-	2/-	......	25% interim for 1909	Cicely Rubber Estates Co., Ltd	1.13.0	1.15.6
			60,000	2/-	2/-	......	26¼% interim for 1909	" " " " *5% Pref*	1.13.6	1.16.6
1905	£75,000	62,007	62,007i	1	1	1,000	25% interim for 1909	Consolidated Malay Rub. Estates, Ltd	8.17.6	9.0 0
1906	£110,000	102,500	102,500r*	1	1	......	12½% for year ending 31-12-08	Damansara (Selangor) Rubber Co., Ltd.	5.7.6	5.12.6
1909	£45,000	40,000	40,000z‡	1	1	......	......	Edinburgh Rub. Estates, (Selangor) Ld.	3.9.0	3.12.6
1909	$550,000	475,000	475,000f‡	1	1	......	......	Elphinstone Estates, Ltd	1.95	2.00
1909	$300,000	300,000	300,000	1	1	......	......	Glenealy Plantations, Ltd.	1,35	1.40
1907	£80,000	70,000	70,000y*	1	1	......	......	Golconda Rubber Co., Ltd.	4.2.6	4.5.9.
1909	$600,000	150,000	30,000	10	5	......	......	Henrietta Estates, Ltd.	4.75	5.00
1906	$680,000	680,000	40,000	17	17	......	......	Hevea Rubber Planting Co. Ltd.	13.00	14.00
1906	£310,000	305,000	305,000	1	1	8,784	7½% interim for 1909	Highlands & Lowds. Para Rub. Co., Ltd.	5.5.0	5.7.6.
1904	£50,000	30,000	30,000	1	1	2,500	5% for year ending 30-6-09	Inch Kenneth Rubber Estates, Ltd	9.0.0	9.7.0
1909	$250,000	200,000	20,000	10	10	......	......	Indragiri (S.) R. and Gutta P. Co., Ltd.	23.50	24.00
1909	£200,000	182,500	950,000j	2/-	1/-	......	......	Kam. (P.) R. & T. Co., Ltd. "A" Shares	6/9	7/-
			105,000	1	1	......	......	" " " "B" "	----	nom.
1905	£65,000	65,000	65,000a‡	1	1	......	......	Kapar Para Rubber Estates, Co., Ltd	6.3.6	6.8.6
1907	$300,000	200,000	20,000	10	7	......	......	Kombok Rubber Co., Ltd	15,00	16.00
1906	£180,000	180,000	180,000q	1	1	......	20% for year ending 30-6-09	Kuala Lumpur Rubber Co., Ltd	6.17.6	7.2.6
1907	£100,000	90,000	90,000	1	1	......	7% for year ending 30-12-08	Labu (F. M. S.) Rubber Co., Ltd. *Contrib.*	4.7.0	4.10.0
1907	£320,000	269,780	198,930	1	1	3,000	10% interim for 1909	Lanadron Rubber Estates, Ltd.	5.0.0	5.3.6
			70,850	1	15/-	......	10% interim for 1909	" " " *Contributory*	4.9 6	4.10.6
1906	Gs 135,000	135,000	580	250	250	......	......	Langen Rub. and Cocoanut Co., Ltd.	..	nom.
1908	£125,000	75,000	60,000o*	1	1	......	......	Ledbury Rubber Estates Ltd.	3.2.0	3.5.0
			40,000z	1	7/6	......	......	" " " *Contributory*	1.18.0	2.0.0
1895	£100,000	98,324 8/-	883,244	2/-	2/-	4,000	65% interim 1909	Linggi Plantations Ltd., *Ordinary*	1.17.3	1.18.0
			10,000	1	1	......	7% for year ending 31-12-08	" " " *7% Pref*	----	nom.
1907	£140,000	118,000	118,000	1	1	......	3% for year ending 31-12-08	London Asiatic R. & Produce Co., Ltd.	4.18.6	5.1.0
1909	£220,000	75,000	150,000	1	10/-	......	......	Lumut Rubber Estates, Ltd.	1.5.0	1.6.6
1906	£400,000	300,000	185,000	1	1	......	10% interim for 1909	Malacca Rubber Plants., Ltd. *Ordinary*	9.7.6	9.10.0
			115,000	1	1	......	" " "	" " " *7½% Pref*	9.7.6	9.10.0
1909	£210,000	175,000	1,750,000	2/-	1/6	......	......	Merlimau Rubber Estates, Ltd	2/10½	3/-
1909	$400,000	400,000	80,000	5	5	......	......	Pajam Limited.	10.00	10.25
1909	$200,000	200,000	200,000	1	1	......	......	Pantai, Limited.	1.20	1.25
1903	£30,000	22,500	225,000l	2/-	2/-	......	25% interim for 1909	Pataling Rubber Estates Synd. Ltd	1.19.0	2.0.6
1909	$500,000	450,000	45,000m*	10	10	......	......	Pegoh, Limited	34.00	34.50
1906	£85,000	85,000	85,000	1	1	......	12½% interim for 1909	Perak Rubber Plantations, Ltd	4.10.0	4.15.0
1910	$450,000	295,000	45,000f‡	5	5	......	......	Port Dickson Rubber Co., Ltd	..	nom.
			35,000	5	2	......	......	" " "	4.75	5.00
1909	£60,000	36,875	15,000l	1	1	......	......	Rembia Rubber Estates Ltd. *Ordinary*	----	1.5.0
			35,000	1	12/6	......	......	" " " *6% Cum. Pref*	1.0.0	1.0.6
1904	£20,000	18.752	20,000u	1	1	......	......	Sagga Rubber Company, Limited	6.17.6	7.0.0
1904	$100,000	100,000	50,000b*	2	2	20,000	60% interim for 1909	Sandycroft Rubber Co., Ltd	24.00	24.50
1905	£100,000	100,000	71,378 28,622l‡	1	1	......	......	Sapong Rubber and Tobacco Estates, Ltd.	1.13.0	1.15.6
1907	£100,000	80,400	48,000i*	1	1	......	......	Seafield Rubber Co., Ltd	4.16.0	5.3.0
			48,000	1	13/6	......	......	" " " *Contributory*	4.0.0	4.3.6
1898	£30,000	30,000	300,000	2/-	2/-	3,000	50% interim for 1909	Selangor Rubber Co., Ltd.	2.4.6	2.5.3
1909	£50,000	32,000	400,000e‡	1	16/-	......	......	Sendayan (F. M. S.) Rubber Co., Ltd	1.10.0	1.10.6
1906	£65,000	65,000	65,000	1	1	......	3% for year ending 31-12-08	Shelford Rubber Estate, Ltd.	2.5.0	2.6.6
1909	£150,000	100,000	100,000i‡	1	15/-	......	......	Sialang Rubber Estates, Ltd	1.15.0	1.17.0
1909	£120,000	100,000	100,000o*	1	1	......	......	Singapore Para Rubber Estates, Ltd.	2.12.6	2.13.6
1905	$500,000	500,000	5,000	100	100	......	......	Singapore Rubber Co., Ltd.	325.00	350.00
1903	$425,000	328,800	2,423	100	100	......	......	Singapore & Johore Rub. Co., Ltd	575.00	590.00
			1,750	100	50	......	......	" " " "	425.00	435.00
1909	$250,000	60,000	10,000x*	10	6	......	......	St. Helena Rubber Coy., Ltd	16.50	17.00
1906	£175,000	175,000	175,000	1	1	......	4½% for year ending 31-3-09	Straits Settlements (B.) Rub. Co., Ltd.	3.5.0	3.6.6
1907	£45,000	40,500	12,600	1	1	......	......	Sungei Choh Rub. Estate, Ltd. *Fully pd.*	3.12.6	3.15.0
			32,400*	1	17/6	......	......	" " " " *Contributory*	3.5.0	3.10.0
1906	£110,000	100,000	100,000h	1	1	......	7½% interim for 1909	Sungei Kapar Rubber Co., Ltd.	5.2.6	5.5.0
1907	£70,000	55,000	55.000	1	1	......	......	Sungei Salak Rubber Co.. Ltd.	3.5.0	3.10.0
1904	£50,000	50,000	50,000	1	1	......	......	Sungei Way (Selangor) Rub. Co., Ltd.	4.5.0	4.7.6
1908	£150,000	60,000	36,000	1	1	......	......	Tebrau (Johore) Rubber Co.	2.10.0	2.12.6
			64,000	1	7/6	......	......	" " " *Contributory*	2.0.0	2.1.0
1909	$200,000	165,000	33,000v*	5	5	......	......	Teluk Anson Rubber Estate, Ltd.	5.00	5.25
1907	£200,000	170,000	170,000r*	1	1	......	5% for year ending 31-8-08	United Serdang (S.) R. Plantations, Ltd.	4.7.6	4.12.6
1909	$1,000,000	637,500	737,500m	1	1	......	......	United Singapore Rubber Estates, Ltd.	1.35	1.40
				1	-/50	......	......	" " " " "	----	nom.
1908	£85,000	65,000	650,000n	2/-	2/-	......	10% for year ending 30-6-09	United Sumatra Rubber Estates, Ltd.	11/-	11/6
1904	£60,000	50,600	506,000m	2/-	2/-	......	25% interim for 1909	Vallambrosa Rubber Co., Ltd.	1.12.0	1.13.0
								GENERAL		
1907	$1,500,000	1,065,150	25,000i*	10	10	......	10% for year ending 31/12/08	Eastern Smelting Co. Ltd,	----	11.50 n.
			116,450	10	7	......	10% for year ending 31-12-08	" " "	8.00	8.25
1898	$225,000	225,000	4,500	50	50	150,000	15% & 2½% bon. for yr. end. 31-12-08.	Fraser & Neave, Ltd.	151.50	153.00
1905	$2,400,000	2,400,000	18,000	100	----	75,000	2½% for year ending 31-10-08	Howarth Erskine, Ltd	58.00	61.50
			6,000	100	....	......	7% for year ending 31-10-08	" " *7% Pref*	90.00	95.00
1896	$1,000,000	1,000,000	6,000	100	100	600,000	10% for year ending 31-12-07	Katz Brothers, Ltd. *Deferred*	----	120.00
			4,000	100	100	......	8% " " " "	" " *8% Cum. Pref*	----	nom.
1901	$34,000	34,000	3,400	10	10	......	20% for year ending 31-10-09	Maynard & Co., Ltd.	22.00	22.50
1899	$875,000	875,000	6,000	100	100	175,000	5% for year ending 31/12/08	Riley, Hargreaves & Co., Ltd.	75.00	80.00
			2,750	100	100	......	7% for year ending 31/12/08	" " " " *7% Pref*	103.00	107.50
1903	$600,000	250,000	25,000n	10	10	......	10% for year ending 30-6-09	Singapore Cold Storage Co., Ltd	14.25	14.75
1891	$30,000	30,000	600	50	50	23,000	10% for year ending 31-7-08	Singapore Dispensary Ltd.	54.00	55.00
1903	£400,000	400,000	400,000	1	1	......	......	Singapore Electric Tramways, Co., Ltd.	4/3	4/6
1884	$200,000	200,000	2,000	100	100	35,000	10% during 1907	Straits Ice Co., Ltd	135.00	145.00
1890	$500,000	498,000	4,980z	100	100	760,000q	5% interim for 1909	Straits Steam Ship Co., Ltd.	197.50	205.00
1887	$3,000,000	3,000,000	3,000,000	10	10	130,000r 1,222,409	10% & 5% bon. for half yr. end. 30-9-09	Straits Trading Co., Ltd.	55.00	56.00

a 152,800 unissued
43,949 6% debenture
b 2,500 unissued
c 5,100 "
d 20,000 "
e 54,500 £1 Prefs. issued
45,500 £1 " unisd
100,000 5/- Ord. "
f 6,250 unissued
g 3,300 "
h 12,993 "
i 5,000 "
j £40,000 6% Debentures 22,000 unissued
k 75.000 unissued
l 94.000 "
m 35.000 "
n 20.000 "

o 175,000 unissued "A" shares
p Sundry Reserves.
q "
r 7,500 unissued
s 20.000 "
t 2,268 9/- paid shares
u 50,220 unissued
a* 16,756 "
c* 4,880 "
d* 15.000 "
e* 20 unissued
f* 20,000 "
g* 221 7½% Debentures
h* 10,000 unissued
i* 8,550 "
k* 6,000 "
l* 5,000 "

m* 25,000 unissued
o* 10.000 "
p* 4,000 "
q* 30,000 "
r* 7,500 "
s* £10,000 Convertible 6% Debentures issued
t* 10,000 do. unissued
n* 5,000 unissued
w* 20,000 "
x* 15,000 "
v* 7,000 "
e‡ 20,000 "
b‡ 5,000 "
d‡ 500,000 "
a‡ 15,000 "
z* 75,000 "

u* 15,000 unissued
c‡ 100,000 "
u 262,500 "
f‡ 10,000 "
g‡ 5,000 "
h‡ 30,000 "
i‡ 30,000 "
j‡ 10,000 "
k‡ 10,000 "
l‡ 10,000 "
m‡ 30,000 "
n‡ 5,000 "
c‡ 50,000 "
p‡ 70,000 "
q‡ 35,000 "
r‡ 6% Deb. Stock Convertible.

DEBENTURES

Name	Buyers.	Sellers.
Howarth Erskine, Ltd. 6% $ 600,000	----	3% d.
Riley, Hargreaves & Co., Ltd. 6%, 284,000	1%	3% p.
Singapore Electric Tramways, Co., Ltd. 5% £350,000	----	----
Singapore Municipal 5% 1,878,000	3%	6% p.
" " 4½% of 1907 1,600,000	3½%	5½% p.
" " 4½% of 1909 1,000,000	3½%	5½% p.
" " 4% 602,900	6%	7% d.

YOKOHAMA SHARE QUOTATIONS

Courtesy A. C. Hutton Potts, Share and General Broker, Yokohama, October, 1909.

STOCKS.	CAPITAL.	NO. OF SHARES.	ISSUE VALUE.	AMOUNT PAID UP.	RESERVE FUND.	AT WORKING ACCOUNT OR CARRIED FORWARD.	DATE.	LAST DIVIDEND.	FOR TERM.	CLOSING QUOTATION.
Brett & Co., Ltd.	-Y- 28,000	2,800	-Y- 10	-Y- 10			31-12-08	12½%	for 1 year	10 Sales.
Club Hotel, Ltd.	185,000	1,850	100	100	3,000	-Y- 768.96	31-3-08	7%	for 1 year	70 Nominal.
Grand Hotel, Ltd.	500,000	5,000	100	100	10,000		30-6-09	4%	for ½ year	100 Sales
Helm Bros., Ltd.	186,000	3,720	50	50	25,000	-Y- 6,395.55	31-12-08	17½%	for 1 year	80 Sales.
Langfeldt & Co., Ltd.	100,000	2,000	50	50	10,000	6,296.63	30-6-09	5%	for ½ year	45 Sales.
C. Nickel & Co., Ltd. †	500,000	20,000	25	25		36,332.37	31-10-09	20%	for 1 year	45 Buyers
Yokohama Engine and Iron Works *	500,000	10,000	50	50	50,000	-Y- 29,421.19	31-5-08	10%	for 1 year	50 Nominal.
Oriental Hotel, Ltd., Ordinary	250,000	3,000	50	50	306,090.49		31-8-07	12%	for 1 year	50 Nominal
Oriental Hotel, Ltd., Preference		2,000	50	50				8%	for 1 year	50 Nominal.
The Union Estate and Investment Co., Ltd. ‡	1,000,000	10,000	100	100	6,000.00	1,753.03	30-9-08	7%	for 1 year	100 Nominal.

† 285,000 unissued.
‡ 475,000 unissued.

*-Y- 390,000 issued.
110,000 unissued.

DEBENTURE LOANS.	AMOUNT OF LOAN.	FACE VALUE OF DEBENTURES.	RATE OF INTEREST.	INTEREST PAYABLE.	CLOSING QUOTATION.
Brett & Company, Limited	11,500.00	100.00	7%	1 June and 1 Dec.	95 Sales.
Yokohama United Club	250,000.00	100.00	7%	30 June and 31 Dec.	100 Sales.
Oriental Hotel, Limited	350,000.00	100.00	8%	1 April and 1 Oct.	103.50 Sales.
Union Estate and Investment Co., Limited	250,000.00	100.00	6%	30 June and 31 Dec.	95 Sellers.

JAPANESE STOCKS.	FACE VALUE.	AMOUNT PAID UP.	LAST DIVIDEND.	DIVIDEND PAYABLE.	CLOSING QUOTATION.
Bonds & Debentures.					
Exchequer Bonds 2nd issue	-Y-100	-Y-100	5%	March and Sept.	-Y-101.50
Exchequer Bonds 3rd issue	100	100	5%	March and Sept.	,, 101.50
Consolidated Bonds (Seiri)	100	100	5%	June and Dec.	,, 100.00
War Bonds (Gunji)	100	100	5%	June and Dec.	,, 100.00
Imperial 5% Bonds	100	100	5%	March and Sept.	,, 101.00
Special 5% Bonds (issued 1906)	100	100	5%	June and Dec.	,, 100.00
Yokohama Water Works Bonds	100	100	6%	June and Dec.	,, 104.00
Yokohama City Public Loan Bonds	100	100	6%	March and Sept.	,, 104.50
Osaka City Harbour Construction Bonds	100	100	6%	June and Dec.	,, 103.00
Osaka City Public Loan Bonds	100	100	6%	June and Dec.	,, 103.00
Kawasaki Dock Yards Co.'s Debentures	100	100	7%	June and Dec.	,, 104.00
Tokyo Race Associations "	500	500	30%	June and Dec.	,, 110.00
Railways & Electric Trams.					
Tokyo Railway Company, Limited	50	50	5 2/5%	June and Dec.	,, 17.55
Yokohama Electric Tramway Company, Limited	50	50	6%	July and Jan.	,, 51.00
Keihin Electric Tramway Company, Limited	50	50	6%	June and Dec.	,, 61.00
Southern Manchurian Railway Co., Ltd.	100	20	6%	June and Dec.	,, 51.00
Hanshin Electric Tramway Co., Ltd.	50	50	12%	May and Nov.	,, 118.70
Cotton Spinnings.					
Kanegafuchi Cotton Spinning Company, Limited	50	50	14%	July and Jan.	,, 107.50
Fuji Gassed-yarn Company, Limited	50	50	14%	July and Jan.	,, 104.20
Tokyo Cotton Spinning Company, Limited	50	50	5%	July and Jan.	,, 47.80
Imperial Hemp Weaving Company, Limited	50	50	12%	July and Jan.	,, 75.70
Nisshin Boseki Kabushiki Kaisha	50	12½	5%	—	,, 16.30
Sugar & Beer Cos.					
Dai-nippon Sugar Refinery Company, Limited	50	50	....	May and Nov.	,, 17.00
Ensuiko Sugar Refinery Company, Limited	50	20	20%	June and Dec.	,, 47.20
Dai-nippon Beer Company, Limited	50	50	12%	July and Jan.	,, 82.45
Kirin Brewery Company, Limited	50	50	6%	July and Jan.	,, 52.50
Docks & Steamships.					
Yokohama Dock Company, Limited	50	33	12%	June and Dec.	,, 60.00
Uraga Dock Company, Limited	50	50	....	July and Jan.	,, 8.50
Kawasaki Dockyard Company, Limited	50	50	12½%	Feb. and Aug.	,, 54.00
Nippon Yusen Kaisha	50	50	10%	May and Nov.	,, 89.50
Hokkaido Tanko S. S. Company, Limited	50	50	14%	July and Jan.	,, 37.70
Miscellaneous					
Tokyo Electric Light Company, Limited	50	50	12%	June and Dec.	,, 99.80
Tokyo Gas Company, Limited	50	50	13%	July and Jan.	, 102.95
Yokohama Union Electric Light Company, Limited	50	50	14%	June and Dec.	,, 94.00
Fuji Paper Mills	50	50	6%	June and Dec.	,, 34.90
Otaru Timber Company, Limited	50	50	....	March and Sept.	,, 12.00
Hoden Petroleum Company, Limited	50	50	20%	April and Oct.	,, 76.55
Tokyo Rope Manufacturing Company, Limited	50	50	18%	June and Dec.	,, 103.00
Japan Horse Improvement Company, Limited	50	50	15%	March and Sept.	,, 6.00
Tokyo Stock Exchange Company	50	50	15 1/5%	June and Dec.	,, 174.10
Osaka Electric Light Company, Limited	50	50	16%	July and Jan.	,, 139.50
Kobe Electric Light Company, Limited	50	50	14%	July and Jan.	,, 110.00

BANGKOK SHARE QUOTATIONS

(Courtesy Messrs. Edwards & Co., Bangkok, Siam.)

NAME.	BUYERS.	SELLERS.	LAST SALES.	ESTABLISHED.	CAPITAL.	NO. OF SHARES.	ISSUE VALUE.	AMOUNT PAID UP.	RESERVE FUND	LAST DIVIDEND.
Siam Electricity Co., Ltd.	Tcs. 380	Tcs. 390	Tcs. 380	1901	£ 300,000	30,000	£ 10—	£ 300,000	Tcs. 491,338	12% Tcs. 4 bon.
Paknam Railway Co., Ltd.	,, 200	,, —	,, 220	1893	Tcs. 400,000	5,000	Tcs. 80	Tcs. 400,000	,, [illegible]7,566	8%
Siam Tramway Co, Ltd.	,, —	,, —	,, 140	1905	,, 1,450,000	6250 Shares 7250 Deb. 1000 P. Shares	,, 100	,, 2,230,000	,, 1,875	—
Meklong Railway Co., Ltd.	,, —	,, 106	,, 105	1907	,, 2,230,000	22,300	,, 100	,, 223,000	,, 28,000	5%
Bangkok Manufact. Co, Ltd.	,, —	,, —	,, 132	1898	,, 400,000	4,000	,, 100	,, 400,000	,, 60,000	7% per for 6 months
Bangkok Dock Co., Ltd.	,, —	,, 135	,, 135	1865	,, 1,000,000	10,000	,, 100	,, 950,000	,, 220,000	
Siam Steam Packet Co.	,, —	,, 57	,, Par	1898	,, 190,000	3,800	,, 50	,, 190,000	,, 34,000	5%
Siam Commercial Bank	,, 1,050	,, —	Par	1906	,, 3,000,000	3,000	,, 1,000	,, 3,000,000	,, 338,850	8%
Menam Motor Boat Co.	,, —	,, 100	,, 100	1905	,, 200,000	2,000	,, 100	,, 200,000		6%
Transport Co., Motor	,, —	,, 90	,, 100	1906	,, 200,000	2,000	,, 100	,, 200,000	—	—
Jenderata Rubber Co *	,, —	,, £8.—	,, 90 (for six calls)	1906	£ 40,000	4,000	£ 10	£ 7.-paid	—	—
Bagan Rubber Co.	,, —	,, —	,, —	1907	Tcs. 300,000	3,000	Tcs. 100	Tcs. 40 per share	—	—
Siam Steam Navigation Co., Ltd.	,, —	,, —	,, —	1909	,, 2,000,000	10,000	,, 200	—	,, 10,000	—
Siam Stone Works, Ltd.	,, —	,, 90	100	1909	,, 350,000	3,500	,, 100	,, 350,000	—	6% half year
Kombok Rubber Co.	,, —	,, —	19	1906	$ 300,000	30,000	$ 100	$7, per Share	—	— —

PHILIPPINE SHARE REPORT

JUNE 1ST, 1909

NAME	WHEN INCORPORATED	AUTHORIZED CAPITAL	ISSUE VALUE OF SHARE	NO. OF SHARES	SUBSCRIBED	PAID UP	RESERVE	WORKING %	DATE	LAST DIVIDEND	CLOSING QUOTATIONS
American Drug Store	1908	₱ 100,000	₱1,000	100	40	₱1,000	......	₱ 5,000	Jan. 4, 1909	......	No sellers.
*Banco Español Filipino	1851	3,000,000	200	15,000	8,439	200	₱225,000	......	......	7% for year 1908	200 buyers
Benguet Consolidated Mining Co	1903	2,000,000	2	1,000,000	495,000	2	......	38,000	Feb. 2, 1909	......	₱1.10.
Benguet Commercial Co., Ltd	1908	200,000	10	20,000	7,360	10	......	......	......	7% for year 1907	₱10.
Bua Mining Co	1905	300,000	100	3,000	2,620	100	......	2,000	Aug. 18, 1909.	......	₱100.
Cadwallader-Gibson Lumber Co	1908	1,000,000	100	10,000	8,650	100	......	......	......	......	No sellers.
*Camote-Clayton Mining Co	1909	400,000	10	40,000	20,000	10	......	......	......	......	₱10.
*Compania Maritima	......	1,018,000	200	5,090	5,090	200	......	......	......	......	₱40 sales
*El Varadero de Manila	......	350,000	100	3,500	3,500	100	......	......	......	......	Sellers 70
Electrical Supply Co., Inc	1909	100,000	100	11,000	500	72	......	......	......	......	No sellers
Export & Import Lumber Co	......	200,000	200	1,000	1,000	200	......	......	......	......	No sellers.
*Fabrica de Hielo de Manila	1894	350,000	50	7,000	7,000	50	......	......	......	18% for year 1908	₱75 sales.
*Germinal Cigar Factory	1900	500,000	500	1,000	1,000	500	₱285,000	14,806	......	6% for year 1908 and 6% on capital	650 buyers.
H. E. Heacock Co	1909	100,000	100	1,000	800	100	......	......	......	First year	No sellers.
*Headquarters Mining Co. (Inc.)	1908	600,000	10	60,000	35,000	10	......	......	......	......	₱6 buyers.
Insular Lumber Co	1907	2,000,000	200	10,000	9,000	200	......	......	......	......	No sellers.
Juan Seiboth Co., Ltd	1908	150,000	20	7,500	500	20	......	......	......	First year	......
*La Concha Button Factory	1905	75,000	100	750	750	100	......	......	......	10% for year 1908	₱110 sellers.
Lambert, Springer Co	1908	200,000	1,000	200	80	1,000	......	......	......	......	No sellers.
Luzon Stevedoring Co	1909	250,000	25	10,000	4,200	25	......	......	Sept. 15, 1909	15%	₱25.
Mindanao Herald Publishing Co	1907	15.000	100	150	75	100	......	......	Dec. 31, 1908.	½ of 1% interim for 1908	No sellers.
Newspaper Publishing Co	1907	400,000	100	4,000	3,740	100	......	......	......	......	......
Minas Carbon de Batan	1902	1,000,000	200	5,000	1,523	200	......	136,812	......	......	200
Walter E. Olsen Co., Inc	1909	500.000	100	5,000	2,033	100	......	......	......	First year	No sellers.
Paracale Gold Dredging Co	1907	£10,000	£1	10,000	9,000	£1	......	......	......	......	£1.10 s.
Palomar Park Amusement Co	1908	300,000	......	300,000	60,312	.50	......	......	......	......	₱1.
Phil. Hemp Machine Co., Ltd	1907	1,000,000	100	10,000	8,500	100	......	......	......	......	₱100
Philippine Publishing Co	1907	600,000	200	3,000	2,181	200	......	......	Mar. 1st, 1909	₱3 a share for 1908	₱50
Port Banga Lumber Co	1908	100,000	100	1,000	934	100	None.	40,000	First Saturday in January	None	No sellers.
The Philippine Gold Dredging Co	1907	200,000	10	20,000	20,000	10	......	......	......	......	No sellers.
*Philippine Co., Ltd	......	750,000	10	7,500	7,500	10	......	......	......	......	₱5 buyers.
Philippine Rosin & Turpentine Co	......	150,000	1	150,000	70,000	1	......	......	......	First year	......
Philippine Exploration Co	1908	2,000,000	10	200,000	90,000	10	......	......	......	......	No sellers.
The Rosenstock Pub. Co	1908	75,000	10	7,500	6,000	10	......	......	......	......	No sellers.
*San Nicolas Iron Works	......	300,000	500	600	600	500	......	......	......	......	₱200 sellers.
San Mauricio Gold Mining Co	1908	4,000,000	200	20,000	......	......	......	......	......	First year	₱200.
Tarlac Railway Co	1906	150,000	100	1,500	1,500	100	......	₱9,674.75	June 30, 1908.	......	No sellers.
Union Hemp Machine Co	1909	50,000	10	5,000	2,600	10	......	......	......	......	No sellers
Zamboanga Cold Storage Co	1903	40,000	100	400	200	100	₱8,500	......	May 1st, 1909.	20%	₱120.

* John T. Macleod's share list

PHILIPPINE BONDS

	DATED	AUTHORIZED	ISSUED	OUTSTANDING	PAR VALUE	RATE OF INT.	WHEN PAYABLE	LAST QUOTATION
Philippine Friar Land Bonds	Feb. 1st, 1904	$7,000,000	$7,000,000	$7,000,000	$ 100	4%	Feb. 1, 1914	104⅝
Public Works and Permanent Improvement Bonds	March 1, 1905	$5,000,000	$2,500,000	$2,500,000	$ 100	4%	March 1, 1915	104⅝
Do.	Feb. 1, 1906		$1,000,000	$1,000,000	$ 100	4%	Feb. 1, 1916	104⅝
Manila Sewer and Water Works Improvement Bonds	June 1, 1905	$4,000,000	$1,000,000	$1,000,000	$ 100	4%	June 1, 1915	104½
Do.	Jan. 2, 1907		$2,000,000	$2,000,000	$ 100	4%	Jan. 2, 1917	104⅝
Philippine Railway First Mortgage Four per cent Thirty Year Sinking Fund Gold Bonds	July 1, 1907	$15,000,000	$5,736,000	$5,736,000	$1000	4%	July 1, 1937	97

*Payment of interest guaranteed until maturity or redemption by the Philippine Government.

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